Province of British Columbia Ministry of Agriculture and Food

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Agriculture Canada

REPORT ON THE EVALUATION OF ARDSA

Project Number 271313

Under

Canada-British Columbia Subsidiary Agreement on

Agriculture and Rural Development

Prepared by:

Ernst & Whinney
Management Consultants
505 - 910 Government Street
Victoria, B.C. V8W 1X3

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FOREWORD FROM THE ARDSA CO-CHAIRMEN

November 15, 1982

In July, 1977, the Governments of Canada and British Columbia signed the Agriculture and Rural Development Subsidiary Agreement (ARDSA), agreeing to commit up to $60 million to projects which would identify or pursue opportunities for development, which would expand employment in the agriculture and food sector, and which would improve the viability of the existing industries to sustain growth.

The agreement was signed on behalf of Canada by the Minister of Regional Economic Expansion and the Minister of Agriculture. On behalf of British Columbia, the agreement was signed by the Minister of Economic Development and the Minister of Agriculture.

The term of the original agreement was five years (1977-1982), and the program has been extended one further year by mutual agreement of the signatory agencies. Projects authorized prior to July 31, 1983 will have until October 31, 1984 for completion of approved works.

As a condition of funding, the signatory agencies agreed to jointly undertake an assessment of the programs carried out under ARDSA, and to evaluate these programs with respect to the general development objectives given in the agreement. In order that the results would be available for continued planning, the program was to be reviewed during the third year of implementation.

The evaluation study reported here represents one of the first attempts to formally evaluate the effectiveness of a large development program using research resources from outside the government agencies involved. It was the purpose of this study to assess the effectiveness of the ARDSA program to date in meeting its objectives and to make recommendations relating to the program and possible future initiatives. A number of related evaluation issues such as appropriateness of stated objectives, adequacy of total program resources, equity of distribution of program benefits, program implementation and delivery, and efficiency of program expenditures were either excluded from the analysis at this time or given secondary importance.

The ARDSA program has proven amenable to evaluation with respect to the extent to which specific program objectives are being met, but little information has been reported on the broader impact these results are having on the agriculture and food sector. Experience gained during the course of this study has shown that the degree to which this program can be accurately assessed by an independent consultant with a limited budget will be constrained by a number of principal factors, such as program size, complexity, availability of data, and program maturity. Accordingly, few recommendations related to future programming have been provided.

As co-chairmen of the federal/provincial management committee responsible for the ARDSA program, it is our intention to provide the results of this study to industry and program participants, and to others concerned with the development of the agriculture and food industry.

It is through thorough evaluation and balanced appraisal of programs currently in place, that the provincial and federal governments are better able to meet the challenges facing the agriculture and food industry in the future.

John Berry

J.H. Berry
Director
Agriculture and Food
Development (British Columbia)
Agriculture Canada
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This study was funded by a grant from the Research, Planning, Training and Market Promotion program of the Canada-British Columbia Agriculture and Rural Development Subsidiary Agreement. The Agreement, which provides a variety of programs for Agriculture and Rural Development, is cost shared equally by the governments of Canada and British Columbia through Agriculture Canada and the Ministry of Agriculture and Food respectively. Programs under the agreement are administered by the Ministry of Agriculture and Food and managed by a joint Federal/Provincial committee.

The responsibility for the report as written and all conclusions reached herein, is the consultants' alone, and does not necessarily reflect the opinions of those who assisted during the course of this investigation and the Federal and Provincial governments which funded the study.

The Project Manager for the study was Mr. Ted Semmens of Ernst & Whinney. He also surveyed Part One. Mr. Gary Runka, of Land Sense Ltd. reviewed Part Two while Mr. Gary Kennedy, of Canadian Bio Resources examined Part Three. Mr. David Hughes and Mr. Bernie Magnan of Ernst & Whinney had the primary responsibility for Part Four. The entire report was typed and produced by Mrs. B. Olan of Ernst & Whinney.

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EXECUTIVE SUMMARY

INTRODUCTION

In March, 1974, the governments of Canada and British Columbia signed a General Development Agreement (GDA) to improve opportunities for productive employment in B.C. and to promote balanced development in the province. As part of GDA, the Agriculture and Rural Development Subsidiary Agreement (ARDSA) was signed in July, 1977. It expires in July, 1982.

This $60 million jointly-shared federal/provincial program recognized that there are opportunities to develop B.C.'s agriculture sector. Its stated objectives are:

- To identify, research, plan and pursue new or unexploited projects related to the development of B.C.'s agriculture industry.
- To expand employment in those existing aspects of the agriculture industry and food processing industry in B.C. which demonstrate production and market potential.
- To improve the viability of the existing industries to sustain growth.

Ernst & Whinney was requested to evaluate the extent to which ARDSA, and each of its four Parts, has met these objectives. To accomplish this, we developed and tested an evaluation methodology, conducted a field survey of nearly 200 participants from 47 ARDSA projects (nearly all of which were complete at the time of our evaluation) and reviewed existing file information on the intended and actual impact of ARDSA funding. This report contains the results of our evaluation and presents a range of recommendations to improve program effectiveness in the future.

STUDY LIMITATIONS

Our ability to make conclusions about the effectiveness and actual performance of ARDSA in total and of each ARDSA Part was hampered by the lack of file data on actual results and the study's scope which called for a relatively small field survey sample (47 completed projects) compared to the number and diversity of ARDSA projects (318 in total). As a result, many observations on actual results and effectiveness have been limited to our 47 sampled projects.

Whenever possible, information from ARDSA files was used to expand the scope and breadth of our conclusions about intended and actual results.

Because the study's scope excluded non-completed projects from our field survey, we were not able to report on any results which may already be accruing from projects which are not yet completed. This limited our ability to draw substantiated conclusions about potential impacts.

Similarly, our ability to make recommendations about program elements or future support to sectors and geographical areas was limited by the lack of file data on actual results, the small size of the sample, and the survey's focus on completed projects rather than a representative sample of all funded projects. For example, it was difficult to recommend which program elements should be enhanced, modified, discontinued or modified due to the lack of statistically valid data on the relative returns from incremental expenditures in each of the ARDSA programs.

In spite of the above limitations, we believe that this evaluation has been able to successfully meet nearly all of its objectives.

OVERVIEW OF ARDSA PROJECT ACTIVITY

Progress has been made in identifying, researching, planning and pursuing projects to take advantage of the opportunity to develop B.C.'s agricultural sector. As of the date of our evaluation (December 31, 1981), 318 ARDSA projects had been approved. Their total cost is $99.6 million. DREE and the province have each committed $21.9 million in ARDSA funds while the private sector's investment is $55.8 million.

This project activity is diverse and has cut across nearly all sectors and geographical areas in B.C.'s agriculture industry. For example:

- Opportunities for the improved production of new and existing commodities are being researched and identified in 30 projects utilizing $2.5 million in ARDSA funds.

- Crown Range land and under-developed farm land are being improved by 119 projects and $23.2 million in ARDSA funds.

- The opportunity to diversify and expand the food processing industry is being exploited by 69 projects and $9.8 million in ARDSA support.

- There are 48 projects supported by a total of $3.9 million in ARDSA funds to specifically pursue the opportunity to make rural life more attractive, basically through the provision of electricity to rural areas.

By funding a diverse range of projects in a variety of agricultural and geographical areas, ARDSA has attempted to strengthen and develop B.C.'s agricultural sector, thus contributing to the important GDA objective of diversification in B.C.'s economy.

Four different ARDSA Parts have funded this project activity:

- Part One (Research, Planning, Training and Market Promotion) projects address the need to identify, plan and research opportunities in the industry.

- Part Two (Co-ordinated Resource Management) projects attempt to improve the utilization of Crown Range land.

- Part Three (Primary Resource Development) projects introduce irrigation, drainage, and flood control infrastructures outside the farm gate.

- Part Four (Support Services and Community Development) projects introduce new or modernized infrastructures and facilities in rural areas and in the secondary processing industries.

We examined separately the relative impact and contribution of each Part.

IMPACT AND CONTRIBUTION OF PART ONE : RESEARCH, PLANNING, TRAINING AND MARKET PROMOTION

Part One has committed $4.8 million in ARDSA funds to 57 diverse projects in an attempt to introduce a wide variety of new and existing technologies, products, skills and services to the province's agricultural industry. The focus of this effort has been on trying to help the B.C. agricultural industry take advantage of potential opportunities for increased employment and agricultural production. For example, Part One projects are attempting to demonstrate and transfer 11 known technologies ranging from abalone aquaculture to zero tillage techniques for grain growers. Four projects are attempting to pilot test the applicability and commercial viability of such known technologies as hydrocoolers and rangeland seeders while four "applied research" projects are developing and testing new technologies, primarily for fruit commodities. Part One also examined the feasibility of four new ventures (including the production of Chinese mushrooms and the treating and marketing of fence posts) and analyzed market opportunities for nine different product groups, including rabbits, bees, oysters and a variety of vegetable commodities. Two new demonstration facilities are also being established with Part One assistance, one for the broiler industry and one for the tree fruit industry.

Part One has therefore made a significant effort to assist the agriculture industry in taking advantage of opportunities for employment and increased production. However, there is little evidence that this major effort has yet paid off in terms of exploited opportunities, new employment or increased production. One reason for the low level of measurable impacts to date is that many of the projects pursuing the objective are still not complete. For example, there was only one completed demonstration project at the time of our evaluation (the Mushroom Compost Replacement Demonstration project) and it did not achieve its objectives. The only completed pilot test of a known technology (the Cherry Hydrocooler) indicated that such technology was not viable. We did not observe any instances in which Part One has been able to establish the commercial viability of an existing technology and to date only one new technology (the Fruit Dehydrator) has been successfully developed, tested and introduced to the industry. The one "market opportunity" study we surveyed (the Swine Industry Study) produced results that were not used nor deemed relevant by the industry. The feasibility studies were successful in making conclusions about the feasibility (or non-feasibility in two cases) of four different ventures, but to date there is little evidence that the feasible ventures have been pursued.

Part One has been successful in its efforts to develop, deliver and evaluate a number of training courses and concepts for more than 3,000 participants from the agricultural sector. Such training has primarily focussed on improving financial management skills in the beef industry. Part One has also been successful in assisting program managers in Parts Three and Four with the implementation of their respective Parts, primarily through the funding of a range of feasibility and economic analysis studies.

Although Part One has attempted to develop several planning tools, Part One's objective to develop a variety of Regional and Commodity Plans has not been met since little actual planning has taken place. Only one Regional Plan (for the Peace River Region) has been produced. Part One has produced only one Commodity Plan, a Strategic Plan for the intensification of the B.C. beef industry. It was generally well received by the industry and is believed to have stimulated activity in the beef sector. Part One attempted to produce a long run Strategic Plan for the swine industry but no Plan was developed.

IMPACT AND CONTRIBUTION OF PART TWO : CO-ORDINATED RESOURCE MANAGEMENT

The carrying capacity and under-utilization of Crown grazing lands provides a unique opportunity for increased forage production. However, in the past there have been conflicts amongst users of this land resource. To resolve this problem, Part Two has committed $13.0 million in ARDSA funds to 87 ARDSA projects (covering more than 100 different Range Units and 608 ranchers) to develop and improve the grazing capacity of Crown Range so that the forage production capability can be better utilized by the beef industry in harmony with forestry, recreation and wildlife interests. Part Two was to accomplish this through the implementation of "high quality" Co-ordinated Resource Management Plans (CRMP's). The Agreement states that Part Two was to implement 220 CRMP's. This objective has not yet been met since only 17 Part Two projects had been completed at the time of our evaluation.

We conducted a field survey of ten Part Two projects. They were generally successful in meeting certain objectives: resource conflicts have been reduced, the education of users has improved, any extra forage production is being utilized, and in the majority of cases, use considerations for wildlife, recreation and timber were well integrated. As a result, we believe that these ten projects have had some role in assisting to increase the B.C. cow herd against national trends, (For example, B.C.'s cattle numbers increased 5% in the period 1977-1980 while the Canadian total decreased 6% in the same period.) We also believe it is premature at this time to retrieve actual data related to ARDSA's impact on increased forage production capability (i.e. additional Animal Unit Months).

These Part Two projects are attempting to make a contribution to the overall ARDSA objective of improving the viability of B.C.'s existing agricultural industry. In the ten sampled projects, the improvements of the range (forage) resources and their integrated use in the long run should contribute to an improved beef industry viability.

Part Two has yet to make any significant contribution to ARDSA's "employment" objective. To date the ten Part Two projects we surveyed have had limited success in creating employment opportunities. It is our understanding that even at the outset, Part Two was never intended to be a big job creator. As a result, there was very little evidence in our survey and in the files that this overall ARDSA objective has been addressed or achieved to any measurable extent. We did find scattered opportunities for temporary jobs, such as range riders for grazing seasons. There were also a very small number of production units at which owners had slight increases in staff or farm family employment. There is also the possibility that jobs might be saved in the future due to the improved viability of the ranch units.

IMPACT AND CONTRIBUTION OF PART THREE : PRIMARY RESOURCES DEVELOPMENT

Many B.C. farm lands have soil moisture deficits or surpluses. But producers first need infrastructure outside the farm gate before they can install drainage, irrigation or flood control projects on the farm. To help resolve this issue, Part Three has committed $10.1 million in ARDSA funds to 32 approved projects to introduce $13.5 million of off-farm improvements so that farmers in turn can introduce on-farm irrigation and drainage works to 15,092 hectares of B.C. farm land. ARDSA files indicate that 980 new hectares will eventually be brought into production and an additional 4,770 hectares will eventually be improved so that production can be increased for those crops which demonstrate market and production potential. Since only nine projects can be considered complete to the extent that all the on-farm works have been introduced, most of these intended results have likely not yet occurred.

We surveyed seven completed projects. They have achieved most of their intended results. That is, they reached their objective of establishing irrigation and drainage works off the farm, thus enabling the introduction of the needed new works on the farm. The viability of the farm units has thus been strengthened. Production capability has been increased to the targetted levels and is being utilized, although not necessarily for those products with the greatest market and production potential.

There was little evidence that ARDSA's overall employment objective was met in the Part Three projects we surveyed. In most cases the construction of the off-farm and on-farm improvements was undertaken by the farmers themselves. Specialized skills such as electrical and welding were sub-contracted out.

With respect to potential new employment opportunities connected with expanded farm operation, the improvements in the surveyed projects basically enabled the farmer himself (and existing staff) to be more efficient. In general, there is a slight increase in work which first goes to existing staff and family before new positions are considered.

IMPACT AND CONTRIBUTION OF PART FOUR : SUPPORT SERVICES AND COMMUNITY DEVELOPMENT

In many rural areas and in several agricultural sectors, the infrastructure and facilities necessary for stability and increased agricultural activity are either non-existent, not easily accessible or are obsolete. Part Four has addressed this problem by committing $15.8 million in ARDSA funds to 142 different projects, resulting in an anticipated $66.0 million of improvements to rural services and processing industries. This includes:

- Development of several abattoirs to provide boxed beef to supermarkets and to small stores.

- Expansion of services offered to farmers, including veterinary clinics and livestock facilities.

- Creation of new product lines, such as seaweed specialties, fruit leathers, cottage wineries, jams and honey production, enzyme production and new product lines for the flour market.

- Replacement of imported products such as juices, blueberries and health foods.

Twenty projects have attempted to introduce a variety of agricultural services (vet clinics, feedlots, etc.) in rural areas while it is intended that 46 electrification projects and two other infrastructure projects will eventually impact 936 users and 448 farm units.

The major portion of Part Four funding (63%) has been related to secondary processing. Sixty-nine projects received assistance to pursue a wide range of expansion and modernization objectives, including the establishment of new businesses.

The 18 projects we surveyed have been successful in meeting their own specific objectives and those of Part Four. We observed new services to primary producers (most of which were being utilized), electrification projects which enhance the ability of current and new farmers to operate more economically and effectively in rural areas, and a variety of firms which have modernized, expanded or established new operations. New products have been developed, new markets are now being served, imports are being replaced, and the industry in general has been stabilized and made more viable by the projects we surveyed.

Based on our field work, this was also the only Part of ARDSA which has yet to create measurable numbers of new jobs. Based on our sample, we have some confidence in the Part Four projection that Part Four will create approximately 460 full-time equivalent jobs and save 300 jobs overall.

ARDSA'S OVERALL IMPACT ON VIABILITY

A major overall ARDSA objective is to improve the viability of existing industries to sustain growth by developing and supporting the agricultural sector and the food processing industry in rural regions. ARDSA has made a significant effort to achieve this objective for existing industries. For example:

- Beef Industry: This existing industry received considerable ARDSA support in an effort to improve its viability. For example, 32% of Part One's research and training funds ($1.5 million) were directed at this industry. Part Two ($13.0 million in ARDSA funds) was specifically aimed at the stabilization and support of the beef industry. With Part Two support, more than three million hectares of Crown Range are to be covered by improved resource management plans. The proposed physical improvements and reductions in resource use conflicts will affect more than 600 ranchers and ARDSA files indicate that such changes will eventually lead to an increase of more than 200,000 Animal Unit Months. A variety of Part Four projects were intended to improve the infrastructure for this industry through the provision of such needed support services as five vet clinics and five livestock handling facilities.

- Food Processing Industry: More than 60 different companies in the food processing industry have been able to improve their viability by expanding or modernizing with $9.8 million in committed ARDSA assistance.

- Fruit and Vegetable Industry: This industry also received considerable ARDSA support. For example, 21 projects and 21% of Part One's research funds ($1.1 million) were directed at this industry. In addition, nearly 30 different firms in this industry received Part Four assistance to expand or modernize their processing capability.

- Farmers: More than 390 different farms will have a better opportunity to improve their viability by now being able to introduce new irrigation and drainage works to more than 15,092 hectares of under-utilized or under-developed farm land. ARDSA anticipates that this will bring 980 hectares of new land into production and improve the production capability on another 4,770 hectares. This is an important potential impact, given that the increase in B.C. cultivated farmland from 1977 to 1981 was 44,516 hectares. In addition, ARDSA files anticipate that nearly 1,000 users, including 448 farms (or approximately 2% of the total number of farms in existence in B.C. in 1981), will eventually have improved electricity and water supply.

Another way to describe ARDSA's efforts to improve the viability of the existing industries is to examine the changes in the "physical plant" that will have taken place with ARDSA stimulation. These physical improvements cut across existing industries and the total investment costs include:

- $14.5 million worth of improvements to 3.3 million hectares of Crown Range. (This represents 35% of the 9.3 million hectares that were in B.C.'s Crown Range Reserves in 1977.)

- $13.6 million worth of off-farm irrigation and drainage infrastructure.

- $48.5 million worth of capital improvements (i.e. new or modernized processing plants) to food processing firms.

- $10.4 million worth of improvements to electrification and water works.

ARDSA has therefore made a significant effort to introduce those services, infrastructures, and capital improvements which could eventually improve the viability of existing industries to sustain growth. In terms of actual improvements to viability (as measured by actual increases in production, competitiveness, productivity, import replacements, etc.), it is still too early to make broad conclusions. The potential for improved viability is certainly there but measurable results cannot yet be identified nor fully attributed to ARDSA. For example:

- The results of Part One's research, training and marketing projects may not be realized for several years.
- Part Two improvements to Crown Range may require up to 60 years before they produce the desired results and affect the ranchers and the beef sector.
- In only a limited number of cases have farmers completed the on-farm introduction of irrigation and drainage works. Therefore, the potential exists for increased production of targetted crops but has not yet been realized.
- Many of the Part Four infrastructure services (eg: vet clinics, livestock handling facilities, electrification, etc.) have only been recently introduced or are still yet to be completed. As such, their potential impact on viability certainly exists but has not yet been felt to any significant degree.

The one area in which actual and measurable increases in viability have occurred is in Part Four's assistance to secondary processing and value-added industries. In the 11 projects we surveyed, we did observe actual increases in production, competitiveness, diversification, productivity and efficiency.

ARDSA'S OVERALL IMPACT ON EMPLOYMENT

ARDSA's second major objective is to expand employment and help save jobs in those existing aspects of the agriculture industry and food processing industry in B.C. which demonstrate production and market potential.

Here again ARDSA has helped to identify opportunities and to introduce improvements which could ultimately lead to better employment opportunities. However, as of December 31, 1981, ARDSA has had only limited success in meeting this objective. We could not identify any number of measurable jobs that had been created or saved as a result of the 28 completed projects we surveyed in Parts One, Two and Three. Indeed, employment creation receives only indirect attention when projects in these Parts are being considered and funded.

Part Four projects had some specific employment targets. Attempts at permanent job creation projects were not successful but the surveyed Part Four projects which modernized or otherwise assisted secondary processing firms were usually able to meet or exceed their employment goals. As previously mentioned, we have some confidence in the ARDSA forecast that Part Four will create 460 full-time equivalent jobs and save an additional 300 jobs.

OPPORTUNITIES FOR IMPROVED PERFORMANCE

There are significant opportunities to improve ARDSA's impact on B.C.'s agriculture industry and to increase assurances that "value-for-money" is received from the potential expenditure of $60 million in ARDSA funds. The opportunities for improved performance are in four major areas:

- timeliness;
- project application and approval process;
- cost efficiency of project expenditures; and
- monitoring and reporting of program results.

TIMELINESS

ARDSA was meant to be a "timely" program. It was to react quickly to requests for assistance. This has not happened. In a significant number of cases, the time required to evaluate, approve and complete ARDSA projects has been excessive. This has not only delayed the introduction of any potential ARDSA benefits into B.C.'s agricultural sector, but has damaged the credibility and acceptance of the program.

We recommend that senior program managers instill a greater sense of urgency in the whole application, approval and project implementation process. The importance to B.C.'s agricultural sector of timely projects needs to be stressed and program managers' performance should be partly assessed based on their results in this area. The status of project applications and ongoing projects should be monitored and reported to the appropriate level of management on a routine basis. Clear accountability needs to be established to identify the one person responsible for ensuring and reporting on the timely success and completion of every ARDSA project.

PROJECT APPLICATION AND APPROVAL PROCESS

Improvements are needed in this process to reduce its lengthy time requirements and to increase management's ability to approve and fund those projects which offer the greatest benefit to B.C.'s agriculture sector. For example, many proposed Part One projects have numerous unclear objectives, thus making it difficult for the decision-makers to assess exactly what such projects are to accomplish, especially in the near absence of any precise statements of project outputs. When outputs were stated they were usually either vague or led to incorrect expectations as to what would be produced.

In Part Two, we have limited faith in the ultimate accuracy of the projected streams of costs and benefits used in the application and approval process and doubt whether funding decisions were always made strictly on the basis of them in any case. There is a need to recognize that even though the cost-benefit and economic analyses conducted in Part Two can produce ratios and rates of return to the last decimal point, they are still crude instruments based on estimates and guesses of future results and cannot capture nor quantify all of the impacts of CRMP implementation. More sensitivity analysis is required along with an assessment of the likelihood of achieving the projected results.

In the Part Three approval process there appears to be little assessment of the market potential for those crops which were to be produced on the new or improved land. It also appears that many potentially worthwhile projects may be overlooked and never get to the application stage. Either the people with the problem cannot get together to define it; or if it is defined and reaches the feasibility stage it gets stopped because of overspecification of off-farm works (and higher than necessary cost estimates) or underestimation of potential benefits.

In Part Four, the instructions to potential applicatns are not clearly understood and this results in time delays while the forms are explained and re-submitted. In addition, there are no standard formats for financial and project cost statements. This makes it difficult to analyze competing proposals for scarce ARDSA funds and hinders the ability to measure results.

To help ensure that the "best" set of ARDSA projects are approved and funded, we have these recommendations:

- The objectives and expected outputs of proposed projects, especially in Part One, should be more clearly stated and defined so that decision-makers know what is to be funded.

- Proposals for Part One projects should consider the project's potential employment impact so that the project can be evaluated in terms of ARDSA's overall objectives.

- Use more sensitivity analysis when assessing the anticipated future results in Parts Two and Three.

- There is a need for more effective extension work in the area of irrigation and drainage to help farmers recognize the requirement for regional improvements and to appreciate the value of on-farm improvements.

- Assess the marketability of the crops produced on land improved by Part Three projects. For example, if all Part Three projects result in increased production of the same crop category, would there still be a market for that crop at the prices used in the benefit cost analysis.

- Part Three projects should be considered from the point of view of total water management, not just the point of view of the major easily identifiable aspect of not enough water or too much water.

- Expand and clarify the instructions given to potential applicants to cut down on the amount of time needed to understand and complete the applications.

- Provide standard formats for financial and project cost statements in Part Four, thus making it easier to analyze, interpret and measure results.

COST EFFICIENCY OF PROJECT EXPENDITURES

We did not conduct an "efficiency audit" nor did we observe any significant examples in which there was a lack of due regard for matters of economy and efficiency. However, there are a number of weaknesses which detract from ARDSA's overall ability to apply $60 million in ARDSA funds in the most efficient manner.

First, there are few standards or guidelines to clearly define what constitutes a cost-efficient expenditure. For example, there is little clear and meaningful direction on standards for Part Two fencing or for Part Three irrigation and drainage works. As a result, a common concern voiced by many ARDSA participants and shared by ourselves is that certain projects and improvements could have been over-specified or over-designed.

Second, management's ability to monitor and control efficiency is weakened by the fact that the project outputs are sometimes poorly defined. In the absence of a clear definition of what is to be produced by a project, it is difficult to ensure cost-efficiency.

Third, and most importantly, there is little or no motivation for the agricultural sector to be cost efficient in some expenditures. This is most evident when contrasting the accountability in Part Two versus part Three. In Part Three, participating farmers in the irrigation or drainage projects had to contribute, on average, 25% of the project's total costs. It is also clear that they would be responsible for certain maintenance costs. As a result, these farmers had a vested interest in the scale, specifications, scope and cost-efficiency of projects. This situation contrasts with Part Two in which 10% of CRMP implementation costs were to be contributed by Range users. But there have been only sporadic attempts to collect these funds from users and there are no systems in place to monitor the status of this $2 million in potential "receivables". Such a situation lessens the motivation for Part Two participants to be cost efficient.

To resolve some of the above problems, we recommend that ARDSA management should:

- Establish clearer guidelines or standards for certain expenditures such as fencing and irrigation or drainage works.

- Clearly define the project's expected outputs and estimate the total true cost of the project.

- In Part Two, be more consistent in collecting the required contribution from the private sector to increase the motivation to be cost-efficient.

MONITORING AND REPORTING OF PROGRAM RESULTS

Although ARDSA has been in existence for nearly five years and its expenditures now exceed $32 million, there is little if any data on the program's actual impact. Nor does there appear to have been any efforts or systems in place to obtain or report such data on a routine basis. As a result, there is a limited data base to evaluate ongoing and competing requests for assistance, to design future initiatives, and to know whether value for money has been received from these sizeable expenditures.

It is essential for program managers and senior management to know on a regular basis what is actually happening, versus what could potentially happen, as a result of ARDSA. Only then can they measure the cost-efficiency of project expenditures, the extent to which value for money is being received, and whether certain proposed projects are likely to succeed or fail. Only with such information can they properly design ARDSA-type initiatives for the future.

To help address this vacuum of information about ARDSA, we recommend that:

- Every ARDSA project, before it is funded, should have an agreed-upon evaluation mechanism built into it. This would state how the project would be evaluated, using what indicators, and by what independent person or agency.

- At an agreed-upon time, after the termination of the project, conduct the previously agreed-upon evaluation. The time required for such an independent evaluation should vary with the size and complexity of the project. For example, it could be as straight forward as contacting the people who requested the project to see if the project's objectives have been met and if they are satisfied. (In our current evaluation of ARDSA we reviewed 47 projects. The average time required to review the file, contact project participants, compare actual results to expected results, and document our findings was two man-days.)

- The data from such evaluations should be aggregated and reported so that the program's overall performance is known.

CHAPTER ONE

INTRODUCTION

1.1 ARDSA'S BACKGROUND

In March, 1974, the governments of Canada and British Columbia signed a General Development Agreement (GDA) to improve opportunities for productive employment in B.C. and to promote balanced development in the province. As part of GDA, the Agriculture and Rural Development Subsidiary Agreement (ARDSA) was signed in July, 1977.

This $60 million jointly-shared federal/provincial program recognized that there are opportunities to develop B.C.'s agriculture sector. Its stated objectives are:

- To identify, research, plan and pursue new or unexploited projects related to the development of B.C.'s agriculture industry.
- To expand employment in those existing aspects of the agriculture industry and food processing industry in B.C. which demonstrate production and market potential.
- To improve the viability of the existing industries to sustain growth.

To accomplish these objectives, ARDSA responds to requests for assistance from the agricultural sector in targetted "rural regions". (These rural regions include all B.C. except Vancouver, West Vancouver, North Vancouver, Burnaby, Port Moody, New Westminster, Oak Bay, Saanich, Victoria and Esquimalt.) It consists of four Parts:

- Part One (Research, Planning, Training and Market Promotion) addresses the need to identify, plan and research opportunities in the industry.
- Part Two (Co-ordinated Resource Management) attempts to improve the utilization of Crown Range land.
- Part Three (Primary Resources Development) introduces irrigation and drainage infrastructures outside the farm gate.

- Part Four (Support Services and Community Development) introduces new or modernized infrastructures and facilities in rural areas and in the secondary processing industries.

Each Part is managed by a Technical Sub-Committee reporting to an overall ARDSA Management Committee. The percentage of the project's cost to be borne by the private or local sector varies in each Part.

Table 1.1 summarizes ARDSA's financial status, the relative funding size of each ARDSA Part at the time of our evaluation (December 31, 1981), and the "leverage" effect of ARDSA investments.

1.2 PURPOSE OF THIS EVALUATION

The Agreement terminates in July, 1982 (in the sense that no new projects will be approved after that date) and the two senior levels of government wish to know:

- Did ARDSA have its intended impact?

- What form might future ARDSA-type initiatives take?

To answer these questions, the two levels of government first undertook a Phase One study which made some progress in establishing the conceptual and practical methodology for the needed evaluation.

Ernst & Whinney was requested to build on that base by accomplishing the following objectives in a Phase Two study:

- To describe a practical and theoretically-correct approach for evaluating ARDSA and to ensure that the recommended evaluation methodology is workable.

- To assess the extent to which ARDSA has achieved its stated goals and objectives, including its impact on the B.C. agri-food industry and its socio-economic impact on B.C.'s rural areas.

TABLE 1.1

FINANCIAL STATUS OF ARDSA ON DECEMBER 31, 1981

Part	Number of Approved Projects	Commitments to Date						Shareable Expenditures to Date (millions)
		BCMAF (millions)	DREE (millions)	Total Government (millions)	% of Total	Local Share (millions)	Total Investment (millions)	
One	57	$ 2.4	$ 2.4	$ 4.8	11.1%	$ .7	$ 5.5	$ 4.0
Two	87	6.5	6.5	13.0	29.8	1.5	14.5	9.7
Three	32	5.0	5.0	10.0	22.9	3.5	13.5	6.6
Four	142	7.9	7.9	15.8	36.2	50.1	66.0	11.7
TOTAL	318	$21.9	$21.9	$43.8	100.0%	$55.8	$99.6	$32.0

Source: ARDSA Financial Statement, December 31, 1981

NOTE: Figures may not add exactly due to rounding.

- To identify any factors which have limited ARDSA's performance and to make recommendations for improving this performance.

To accomplish these objectives, the Ernst & Whinney Project Team received advice and assistance from an Evaluation Steering Committee composed of representatives from Agriculture Canada, the federal Department of Regional Economic Expansion, the B.C. Ministry of Agriculture & Food, and the B.C. Ministry of Industry & Small Business Development.

1.3 OVERVIEW OF THE REPORT

The next Chapter summarizes our evaluation methodology which is partly based on our review of the Phase One study. Chapters Three to Six evaluate the performance to date of each ARDSA Part, highlighting each Part's contribution to the overall ARDSA objectives. Each such Chapter presents the evaluation framework (i.e. working objectives, performance indicators, etc.) used to review that Part, summarizes the Part's intended impact and then uses the results of our evaluation exercise to draw conclusions as to the extent to which the Part's objectives have been met. These Chapters focus on each Part's impact on the agri-food industry in B.C. and on each Part's socio-economic impact on B.C.'s rural areas.

Chapter Seven examines ARDSA's overall performance by aggregating our findings and conclusions about each of the component Parts. It summarizes the impact of ARDSA expenditures on the B.C. agri-food industry and on rural areas in B.C. It thus assesses the effectiveness of ARDSA programming in meeting its stated goals and objectives and describes the degree of progress achieved.

Chapter Eight assesses the implementation of ARDSA as it relates to the overall effectiveness of the program, including a review of the cost efficiency of project expenditures. This Chapter, along with the observations in the previous Chapters, also provides an input to consideration of directions for future agriculture development programs in B.C.

Appendix A is an annotated listing of the ARDSA projects which had been approved as of December 31, 1981.

Appendix B documents some key indicators which form the baseline data for the agri-food sector and rural communities in B.C. in 1977 and 1981.

CHAPTER TWO

OVERVIEW OF THE EVALUATION FRAMEWORK

Our methodology framework for evaluating ARDSA consisted of seven elements:

- The actual working objectives for each ARDSA Part and for ARDSA in total, as derived from the objectives stated in the Agreement.
- Valid and sufficient performance indicators to measure the extent to which each working objective was met and to measure other program effects.
- The causal relationships which demonstrate how the ARDSA activities and outputs were to ultimately lead to the attainment of the working objectives.
- Reliable and unbiased data sources for each performance indicator.
- Appropriate data collection processes and survey instruments for obtaining data from each data source.
- A pilot test of the methodology.
- A field survey of 47 projects.

This Chapter discusses the elements and describes how they were used in the evaluation process.

2.1 ELEMENT ONE : WORKING OBJECTIVES

The most critical element in the evaluation framework is a clear and agreed-upon statement of the program objectives for which the level of achievement is to be measured. The Agreement states the objectives for each ARDSA Part. However, for evaluation purposes, we needed "working objectives" which were more specific, quantifiable and more amenable to measurement. We also wanted to more accurately capture the original intent of the agencies who designed and approved the Agreement. It was a complex task to identify such working objectives because for each ARDSA Part there were stated and unstated goals and expectations.

To develop working objectives, we first identified the formal objectives that were stated in the Agreement. We also reviewed the program documents and correspondence that formed the background to the initial formulation of the Agreement. We complemented this desk research by interviewing program managers, policy planners and other government officials who were, or are, involved in ARDSA's planning, implementation and delivery.

This approach enabled us to identify a set of working or operational objectives that may be used throughout the evaluation process for each ARDSA Part. Later Chapters describe the "transformation" of the stated objectives into the working objectives for each Part.

2.2 ELEMENT TWO : VALID AND SUFFICIENT PERFORMANCE INDICATORS

The next element in the evaluation framework is the set of indicators to measure the extent to which the working objectives have been met and to measure any other effects, intended or unintended, caused by the ARDSA activities and outputs. Multiple performance indicators are usually needed to capture the intent of a single program objective. For instance, several ARDSA objectives relate to increasing agricultural activity. Although "agricultural activity" is not directly measurable by one single indicator, several measurable surrogates exist that reflect different aspects of the magnitude of this activity. For example, investment activity, increased production, etc. can be used as multiple performance indicators to provide a reasonable approximation for the otherwise unmeasurable agricultural activity objective.

In developing these performance indicators, we ensured that the desired characteristics of validity and sufficiency are met. To be valid, the performance indicator must always reflect the desired change or result intended by the program objectives. Generally, the measurement of work or program outputs is not an acceptable substitute for measuring progress in achieving a program objective, even though it may be of considerable interest to program managers.

For example, the number of research reports produced during the life of ARDSA is a useful statistic that should be reported, but it is not a valid measure of the extent to which this Part has met its objectives.

To identify indicators that are sufficient in number and scope, we ensured that when the indicators relating to a particular objective are grouped, they provide a comprehensive measure of effectiveness.

Our evaluation framework uses five basic categories of indicators:

- Effectiveness Assessment: These are the indicators which measure the extent to which the overall ARDSA objectives and the specific working objectives of each Part have been met. For example, in Part Four, it is important to measure the extent to which the ARDSA objective of job creation has been achieved. In addition, the short run working objective for this specific Part refers to inducing firms to expand or modernize. Thus, if we wish to measure success in meeting this Part's particular objective, we must also measure the number and type of such expansions or modernizations.

- Other Impacts and Results: Each component has had impacts which do not necessarily relate to ARDSA or its working objectives. This category of indicators measures these additional intended and unintended results. For example, a possible unintended result in Part Four is the substitution of capital for labour.

- Program Outputs: It is also useful to measure the program outputs for each Part. As was stated previously, this category of indicator provides useful statistics on the level of activity in each Part but is not a valid measure of the extent to which objectives have been met.

- Timeliness: An unstated but important objective for ARDSA is that it be a "quick response" program. It was intended that commodity groups, Regional Districts, expanding firms etc. should not have to wait "excessive" periods of time to receive word on their applications for ARDSA assistance, nor should there be excessive delays in putting the assistance in the hands of the recipient, given the need for prudent management of public funds and the rules of Central Agencies. Therefore, each Part has indicators measuring the "response time" encountered by ARDSA participants.

- Non-Quantitative: Because of the nature of ARDSA, many objectives can not be completely measured via quantitative indicators. Instead, there is a need to summarize and present the perceptions, conclusions, and beliefs of ARDSA participants and quantify such information whenever possible. For example, it was critical to determine the "incremental" role played by ARDSA: Would the investment have been made without ARDSA assistance? Did the assistance affect the timing of the investment decision?

2.3 ELEMENT THREE : CAUSAL RELATIONSHIPS

An understanding of the causal relationships between ARDSA's activities and outputs and the ultimate effects is critical for each Part. The evaluation framework describes this causal relationship (with schematic diagrams) by:

- Identifying the activities carried out by each Part.
- Highlighting the outputs produced as a result of these activities.
- Showing the intended (and unintended) short run and long run effects of these outputs.
- Illustrating that these intended effects relate back to the overall working objective.
- Identifying the performance indicators to measure effects.

2.4 ELEMENT FOUR : RELIABLE AND UNBIASED DATA SOURCES

For each performance indicator, we determined if there is a data source which contains or provides reliable and unbiased information about the status of the performance indicator. Common data sources were:

- Existing systems that routinely report to management on the status, level of activity, and impact of the various ARDSA Parts. For example, DREE's British Columbia Implementation System contains valuable data on every ARDSA project.
- Program files and records.
- Program personnel.
- Past or present program beneficiaries.
- Other persons having direct program knowledge.
- Federal and provincial statistical gathering agencies.

We strived to identify data sources which are reliable and bias-free.

- Reliable: The data source is accurate, consistent and dependable.
- Bias-Free: The data is fair and impartial. Bias can occur unintentionally or it may be due to subjective influences that are difficult, if not impossible, to prevent. Normally, data sources that represent the opinions or judgements of program personnel were questioned. Individuals served by an ARDSA program or independent third parties were generally more reliable data sources for the majority of performance indicators.

2.5 ELEMENT FIVE : APPROPRIATE DATA COLLECTION PROCESS AND SURVEY INSTRUMENTS

For each performance indicator we used the most appropriate process for obtaining and compiling performance information from the data source to show the actual status or achievement level. Such data was collected by one or some combination of the following methods:

- Interviews or questionnaires directed toward individuals with sufficient program knowledge to respond, eg: program managers, program clients, or knowledgeable or interested third parties.

- Review of pertinent records, files, reports, or statistical data.

To collect the needed data we developed two types of survey instruments:

- To capture basic information on the characteristics, intent and actual results of all ARDSA projects, we designed Data Sheets which were completed by government personnel, under our supervision, using the project files in Victoria. We, and not government staff, conducted the analysis of the results.

- To capture information on the actual ARDSA results, we designed Field Interview Guides for each Part.

2.6 ELEMENT SIX : PILOT STUDY

We tested the above methodology in a pilot study of seven ARDSA projects and concluded that:

- The approach was feasible for collecting the necessary data.

- Very little information on actual results existed in ARDSA files.

- If we were to make meaningful conclusions about ARDSA's potential and actual impact, then a larger sample of completed and non-completed projects would be required in our field survey so that a larger data base would be available for the analysis of actual and potential results. (The Terms of Reference called for a sample of 45 completed projects from a total population of 318 approved projects.) For example, only a very small proportion of Part Two projects were completed at the time of our evaluation and they could not be considered representative of the program as they were all initiated at the outset of ARDSA and substantial changes have occurred almost continually since that time. Therefore, we recognized that it would be essential to include in our sample some of those non-completed Part Two projects which had been initiated more recently.

- Similarly, the pilot study clearly indicated to us that if useful recommendations were to be made about program elements and future support to different sectors and areas, then more ARDSA projects, both completed and non-completed, should be included in our field survey so that we would have a better data base for analysis.

On two separate occasions (after the pilot study and half way through the field survey) we expressed our concern about the sample size and our ability to draw conclusions and make recommendations. The Evaluation Committee decided not to accept our strong recommendations to increase the sample size and to include non-completed projects in the field survey exercise.

2.7 ELEMENT SEVEN : FIELD SURVEY

To obtain information on ARDSA's actual results we surveyed a sample of 47 projects, nearly all of which were complete at the time of our evaluation. We allocated the sample amongst the four ARDSA Parts based on:

- The number of approved projects in each Part.

- The ARDSA funds allocated for each Part.

- The "diversity" of projects in each Part (i.e. the greater the diversity and variety of projects in a Part, the more we sampled from it).

We then stratified the projects in each Part to ensure that our sample was representative with respect to:

- industry and commodity;
- area of province; and
- program elements within a Part.

Table 2.1 lists the projects we sampled. We excluded from our sample any projects with which we had been involved in the past. These projects are designated in Appendix A.

2.8 STUDY LIMITATIONS

Our methodology for the evaluation of each Part utilizes a set of "ideal" performance indicators (ideal in the sense that they are valid and sufficient and it would be desirable to obtain information on all of them). In the field survey, we attempted to obtain data and information for each of these performance indicators. Several factors limited our ability to report back in quantifiable terms on every performance indicator:

- The intended results had not yet occurred even though the project was complete. Or,
- We were not confident in the data and information supplied to us. Or,
- The results or impacts had happened but there were no reliable sources to quantify these results. Or,
- It was impossible to identify that portion of the observed results that could be attributed to ARDSA.

Our ability to make conclusions about the effectiveness and actual performance of ARDSA in total and of each ARDSA Part was hampered by the lack of file data on actual results and the study's scope which called for a relatively small field survey sample (47 completed projects) compared to the number and diversity of ARDSA projects (318 in total). As a result, many observations on actual results and effectiveness have been limited to our 47 sampled projects. Whenever possible, information from ARDSA files was used to expand the scope and breadth of our conclusions about intended and actual results.

Because of the Evaluation Committee's decision to exclude non-completed projects from our field survey, we were not able to report on any results which may already be accruing from projects which are not yet completed. This limited our ability to draw substantiated conclusions about potential impacts.

Similarly, our ability to make recommendations about program elements or future support to sectors and geographical areas was limited by the lack of file data on actual results, the small size of the sample, and the survey's focus on completed projects rather than a representative sample of all funded projects. For example, it was difficult to recommend which program elements should be enhanced, modified, discontinued or modified due to the lack of statistically valid data on the relative returns from incremental expenditures in each of the ARDSA programs.

It is also important to stress that this evaluation is not a cost-benefit study, an operational audit, an efficiency review, nor a description of ARDSA's structure, conduct, historical development, and relationship to other assistance programs. (For example, it is not the intent of this report to address the potential difficulty in managing, implementing, or delivering a "reactive" program such as ARDSA). Such issues could warrant their own study and are thus not included in the scope of our evaluation. These topics are addressed in our evaluation only to the extent that they have an impact on program effectiveness.

In spite of the above limitations, we believe that this evaluation has been able to successfully meet nearly all of its objectives.

TABLE 2.1

ARDSA PROJECTS INCLUDED IN THE FIELD SURVEY

Part One	Part Two	Part Three	Part Four
1. Swine Industry Study (Project Number 271009)	1. Yahk Range Unit CRMP (271073)	1. Farleigh Lake #1 (271003)	1. S. Spetifore & Sons Ltd. (271233)
2. Mobile Farm Management Clinic (271011)	2. Dutch Findlay Range Unit CRMP (271060)	2. Farleigh Lake #2 (271003)	2. Kootenay Veterinary Clinic (271236)
3. Fruit Dehydrator (271034)	3. Grasmere Range Unit CRMP (271082)	3. Basque Vineyards (271113)	3. Milligan Creek Power (271206)
4. Hydrocooling of Cherries (271037)	4. Kettle Valley South-Rock Mountain Range Unit CRMP (271079)	4. St. Mary's Prairie (271108)	4. Sumas Prairie Water Supply (271297)
5. Mushroom Compost Replacement Demonstration (271044)	5. Old Timer's Mountain CRMP (271097)	5. Oliver #18 (271101)	5. South Buick Extension (271671)
6. Regional Development Plans (271024)	6. Tremont Creek CRMP (271053)	6. Upper Deep Creek (271004)	6. Big Creek Community Power (271219)
7. Beef Industry Study (271035)	7. Beaverdam Range Unit CRMP (271052)	7. Kent-Hammersley (271101)	7. B.C. Coast Vegetable Co-op Association (271200)
8. Planning Assistance to Part Three (271013)	8. Parker-Felker-Onward Range Unit Range-Development Plan (271066)		8. J & L Meats Company Ltd. (271249)
9. Planning Assistance to Part Four (271014)	9. Wren Community Pasture (271420)		9. Sun Rype Products Ltd. I (271249)
10. Financial Management Training-Beef Producers (271029)	10. Sunset Prairie Community (271090)		10. Sun Rype Products Ltd. II (271665)

Table 2.1 continued

Part One	Part Two	Part Three	Part Four
11. ARDSA Program Evaluation Phase One (271309)			11. Pan-Ready Poultry Ltd. (Sooke) (271299)
			12. Merryfield Cattle Co. Ltd. (271661)
			13. Vernon Fruit Union (271280)
			14. Okanagan Dried Fruits Ltd. (271296)
			15. Fraser Valley Mushroom Growers (271256)
			16. Western Protein Food Corp. (271242)
			17. East Chilliwack Agricultural Co-op (271664)
			18. Forest Stand Improvement Project (271281)
			Note: An additional Part Four project was examined. The Public Information Project (271006) provided support to all four Parts and is discussed separately in Chapter Eight.

CHAPTER THREE

EVALUATION OF PART ONE: RESEARCH, PLANNING, TRAINING AND MARKET PROMOTION

3.1 INTRODUCTION

The Agreement recognized that a constraint to the development of B.C.'s agricultural sector is a lack of information on the sector's plans and potential opportunities. When ARDSA was initiated, there were limited mechanisms in place to transfer new information, skills, and technologies to B.C.'s agricultural areas. Part One was to address that issue. Its stated objectives in the Agreement are:

- To provide rural planning by geographical areas within which initiatives may be developed by government, municipalities and residents.
- To support pilot demonstrations designed to test new techniques and approaches that will improve or increase production and to identify specific employment opportunities.
- To provide meaningful opportunities for participants in the agricultural industry through consultation and co-ordination with government in planning projects.
- To provide the mechanism required to encourage the emergence of latent entrepreneurship and to influence existing entrepreneurs to develop new and/or existing opportunities in this sector.
- To provide for improvements in the productivity and efficiency of the provincial agricultural labour force.

To achieve these objectives, 57 Part One projects had been approved at the time of our evaluation. The total costs for those projects was $5.5 million. BCMAF and DREE each committed $2.4 million while the private sector's committed share was $.7 million. As will be seen in this Chapter, the Part One projects were extremely diverse in nature and ranged from the pilot testing of a new way to cool cherries to the development of a strategic plan for B.C.'s beef industry. Tables 3.1 and 3.2 indicate the commodity and spatial diversification of projects in Part One. Appendix A contains a detailed listing of all approved Part One projects. These projects have attempted to introduce and/or promote many products, technologies, and services that were new to B.C. These ranged from Chinese Mushrooms to new processes for growing greenhouse vegetables.

3.2 WORKING OBJECTIVES

For evaluation purposes, we needed a precise statement of "working objectives" that would be more amenable to measurement, and more precise than the objectives found in the Agreement. We also wanted to incorporate into this new set of working objectives, any goals, perceptions, targets, intent, etc. which were not explicitly stated in the formal objectives. Based on reviews of relevant documents, correspondence, and background reports, we concluded that:

- The Part One planning activity was meant to be "effective" in the sense that it should enable the development of initiatives by government, municipalities and residents; it should encourage active participation of the agricultural industry; it should be in the best national and provincial interests; it should result in regional and provincial agricultural plans and policy frameworks, including commodity and employment goals.

- The Agreement had other explicit objectives that had to be incorporated into the working objectives. For example, it was recognized that if the other ARDSA parts were to be implemented effectively, they would require appropriate assistance. Similarly, Part One was to fund any evaluations of ARDSA.

- If Part One results are to be used, they must be disseminated to the appropriate parties. They can then use the information to pursue opportunities or to take steps to avoid potential problems. It was therefore necessary to incorporate this "dissemination of results" objective in the working objectives.

- The Technology Transfer program was introduced in early 1980. It basically enabled demonstration and testing projects to take place both on and off the farm. Previously, ARDSA had operated only "outside" the farm gate.

TABLE 3.1

DIVERSIFICATION OF PART ONE PROJECTS BY COMMODITY

Commodity	Number of Part One Projects Approved	% of Total Part One Funds
Beef	8	32%
Vegetable	11	15
Fruit	10	9
Honey	1	4
Seafood	2	2
Grain	1	2
Swine	1	1
Farmers in General	2	1
Sheep	1	1
Chicken	1	1
Rabbit	1	Less Than .5
Other projects not specific to any particular commodity (eg: program evaluation)	18	31
	57	100%

TABLE 3.2

DIVERSIFICATION OF PART ONE PROJECTS BY REGIONAL DISTRICT

Regional District	Number of Approved Part One Projects	% of Total Part One Funds
Bulkley-Nechako	2	3.9%
Capital	6	2.6
Cariboo	1	1.4
Central Okanagan	2	3.2
Fraser-Cheam	2	1.5
Greater Vancouver	1	1.0
Okanagan-Similkameen	5	4.9
Peace River-Laird	1	2.1
Powell River	1	-
Thompson-Nicola	2	3.5
Not Applicable to a Specific Regional District	34	76.0
	57	100.0%

- Part One had a definite training objective which had to be specifically recognized.

Table 3.3 identifies the working objectives that we established based on these points. The associated performance indicators are also included.

Figure 3.1 summarizes the way in which Part One was intended to achieve its objectives. The numbers following each effect or objective refer to the performance indicators in Table 3.3 which can be used to measure the extent to which that objective or intended effect was met.

3.3 FIELD SURVEY

Of the 57 Part One projects, 33 were classified as complete by the Evaluation Steering Committee at the time of our evaluation. Our survey of 11 completed projects involved more than 50 different interviews with industry representatives, people requesting the studies, team members from the project, and program managers.

The remainder of this Chapter outlines the extent to which Part One met each of its working objectives. In doing this, we have used the results of the field survey and when appropriate, we have used information on intended and actual results found in the files for completed and non-completed projects which were not surveyed. Using this approach, we were able to make observations in most cases on the entire set of Part One projects.

3.4 OBJECTIVE ONE : OPPORTUNITIES FOR EMPLOYMENT AND INCREASED AGRICULTURAL PRODUCTION

The first working objective of Part One is:

> To help the B.C. agricultural industry take advantage of potential opportunities for increased employment and agricultural production, both on and off the farm.

The Agreement established six ways for Part One to accomplish this objective:

- Demonstrate and transfer known technology so that participants in the industry will be better aware of opportunities for improved production.

TABLE 3.3

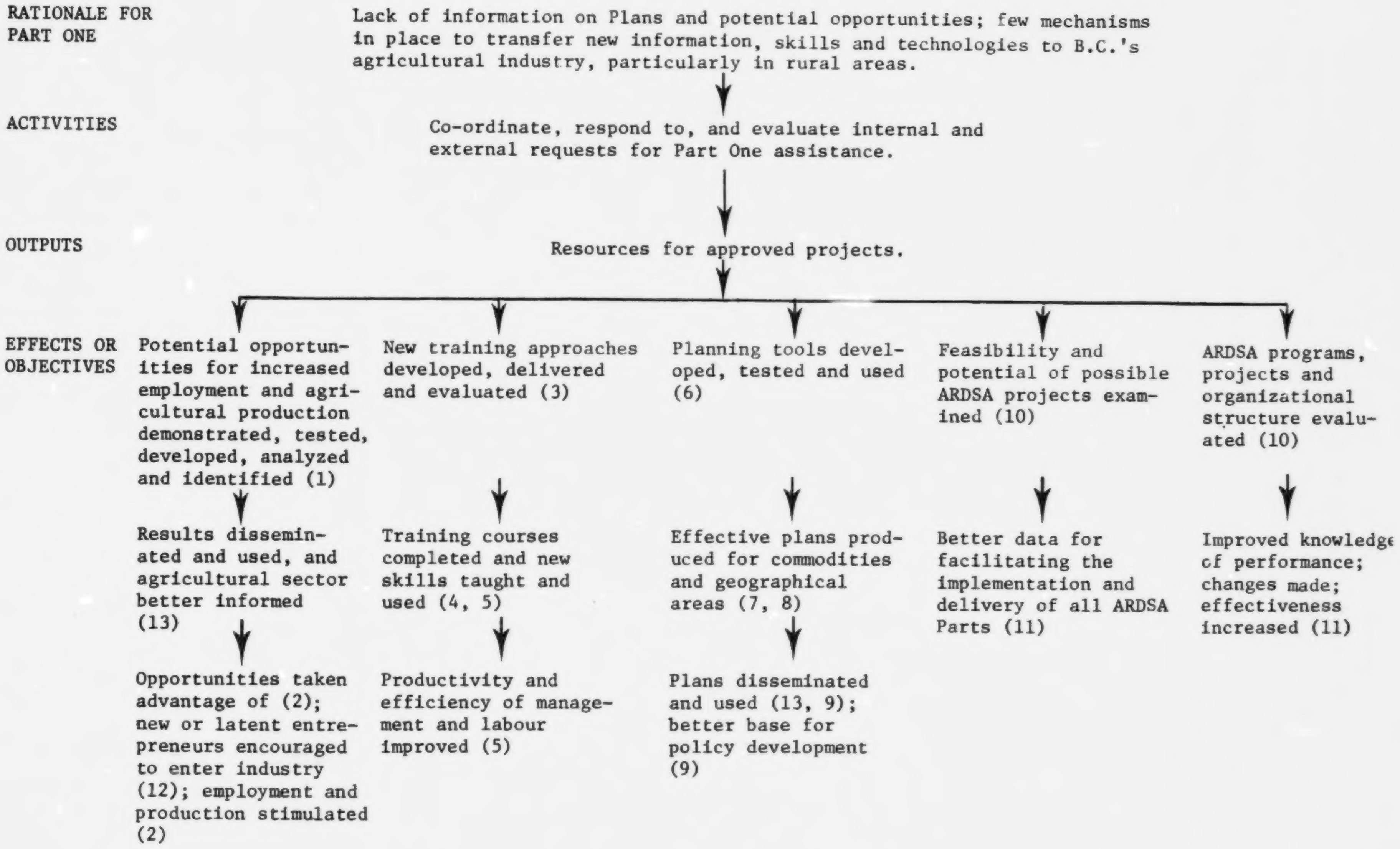
EVALUATION FRAMEWORK FOR PART ONE

Working Objective	Associated Performance Indicators
1. To help the B.C. agricultural industry take advantage of potential opportunities for increased employment and agricultural production, both on and off the farm	1. Quantitative description of the number and type of such projects and studies undertaken. 2. Results of such projects in terms of number and type of opportunities identified and acted on, new ventures or entrepreneurs established, increased agricultural activity stimulated, new technologies introduced, preventing bad opportunities from being pursued.
2. To develop, provide and evaluate various forms of training that will improve the productivity and efficiency of labour and management in the agriculture industry, both on and off the farm.	3. Quantitative description of the number and type of such projects. 4. Level of participation in the training projects. 5. Usefulness of such projects in terms of new skills and technology acquired and put to use.
3. To provide effective rural planning by geographical area and commodity.	6. Description of the planning tools designed, tested and implemented; usefulness of such tools in terms of ways in which they have been successfully applied, understanding of them, etc. 7. Number of geographical areas that now have a plan, including B.C. as a whole; number of commodities for which there is a plan or a goal. 8. Number and type of other plans produced, including employment goals. 9. Effectiveness and usefulness of such plans in terms of: number and type of opportunities identified, perceived credibility and relevance, degree of meaningful participation by the agricultural industry, actions taken based on the plans, extent to which the intended type of planning was carried out.

Working Objective	Associated Performance Indicators
4. To facilitate the implementation and evaluation of all ARDSA Parts.	10. Number and type of such projects and the level of assistance to each Part.
	11. Extent to which the program managers found the projects useful in implementing and evaluating ARDSA.
5. To encourage the emergence of latent entrepreneurship.	12. Number of new entrepreneurs stimulated to enter the industry.
6. To disseminate the results of projects for the use of the appropriate parties so that the opportunities can be developed or problems prevented.	13. Number of reports, plans etc. distributed and to whom.

FIGURE 3.1

INTENDED CAUSAL RELATIONSHIP FOR PART ONE



RATIONALE FOR PART ONE

Lack of information on Plans and potential opportunities; few mechanisms in place to transfer new information, skills and technologies to B.C.'s agricultural industry, particularly in rural areas.

ACTIVITIES

Co-ordinate, respond to, and evaluate internal and external requests for Part One assistance.

OUTPUTS

Resources for approved projects.

EFFECTS OR OBJECTIVES

Potential opportunities for increased employment and agricultural production demonstrated, tested, developed, analyzed and identified (1)

Results disseminated and used, and agricultural sector better informed (13)

Opportunities taken advantage of (2); new or latent entrepreneurs encouraged to enter industry (12); employment and production stimulated (2)

New training approaches developed, delivered and evaluated (3)

Training courses completed and new skills taught and used (4, 5)

Productivity and efficiency of management and labour improved (5)

Planning tools developed, tested and used (6)

Effective plans produced for commodities and geographical areas (7, 8)

Plans disseminated and used (13, 9); better base for policy development (9)

Feasibility and potential of possible ARDSA projects examined (10)

Better data for facilitating the implementation and delivery of all ARDSA Parts (11)

ARDSA programs, projects and organizational structure evaluated (10)

Improved knowledge of performance; changes made; effectiveness increased (11)

- Test a known technology in a pilot situation to establish its commercial viability or to assess its potential application to a new product or Region.

- Through applied research, develop new technological opportunities to the point where they could be successfully used at the commercial level in the agriculture and food processing industry.

- Analyze the feasibility of specific opportunities for new processes, products or services.

- Identify specific new opportunities and provide the needed information to encourage the existing industry (or some other entrepreneur) to take advantage of the situation.

- Provide facilities so that an industry itself could do its own demonstrations, testing and analysis.

The remainder of this section presents our findings and conclusions about the extent to which each approach was successful in achieving its objective.

Demonstrate and Transfer Known Technology

There were 11 Part One projects whose objective was to demonstrate and transfer some form of known technology. They were concerned with such diverse technologies as:

- the use of biological control agents for greenhouse vegetable growers;

- abalone aquaculture; and

- zero tillage techniques for grain growers.

Of these 11 projects, four were supposed to have been completed by the time of our study. Only one project was designated as complete and thus eligible for our field survey: the Mushroom Compost Replacement Project. We included it for our detailed evaluation. Its stated objective was:

> To demonstrate that commercial production of mushrooms can take place on wood waste (eg: sawdust or wood chips) using a supernatant liquid which is a by-product of the production of animal feed from wood.

This demonstration project, which was proposed as being a potentially significant benefit to the B.C. mushroom growing industry, was also to include an economic analysis and two field day demonstrations for members of the Fraser Valley Mushroom Growers Association.

Based on interviews with industry and government representatives connected with the project, we have concluded that this project did not achieve its own specific objectives and did not contribute to Part One's objectives. For example:

- The project was not able to grow commercial size quantities of mushrooms. The results were inconclusive for industry purposes since no commercial results could be demonstrated.
- Since the technology had not reached the stage at which a demonstration could be made, the project in fact became more of a research experiment than a demonstration. Therefore, no demonstration was possible.
- The economic analysis was thought to be of little use by all those contacted. One person stated that "no one would utilize the analysis to base an investment decision". As the production scale was not big enough, there was little data on which to base a thorough and acceptable analysis.
- No demonstrations were held for members of the industry.
- We are not aware of any mushroom growers in B.C. who have introduced the technology on a commercial basis.

The project therefore did very little to demonstrate the commercial and economic application of the process. One project participant stated that "The approach may have some merit but little was reported that could be used as a basis for future work in this area".

We also reviewed the ARDSA-produced Data Sheets for the other ten projects pursuing this "demonstration objective". None of these projects are yet complete and thus there is little data on results to date. The Data Sheets did indicate that some attempts have been made to demonstrate certain technologies:

- Nine field days have been held to demonstrate the production and use of biological control agents.

- There was one demonstration of zero tillage techniques. There were 31 people in attendance.

- There are ongoing demonstrations of virus-free seed potato production.

Pilot Test Known Technology

There were four projects which pursued this objective:

- The Rangeland Seeder Evaluation and the Hyrocooling of Cherries projects were meant to examine the applicability of a known technology to a new region or product.

- The Sheep Production Technology Transfer and Nutrient Film Lettuce Production projects were pilot tests to establish the commercial viability of an existing technology.

Only one project, the Hydrocooling of Cherries Project, was complete at the time of our study and we included it in our field survey. This project involved the purchase, installation and testing of an in-line hydrocooler to be placed in a cherry packing line at the Lake Area Co-operative Growers facility in Summerland. The hydrocooler was to be operated on a commercial basis and the objective of this particular ARDSA project was to use the resulting information to:

> Determine the desirability of further expanding this technique in the cherry industry and hopefully for other fruits and vegetables. If significant benefits are demonstrated, it is anticipated that several applications for the purchase of this equipment will be received by Part Four of ARDSA.

Since the hydrocooling technology was well known and was already being used by cherry lines in Washington, the project was considered primarily as the application of known technology. Hydrocooling uses a water spray and permits rapid cooling of the product and rapid movement to markets, thus reducing the time for product deterioration. It was hoped that the hydrocooler would improve cherry condition on arrival at market, provide higher customer satisfaction and reduce claims which had exceeded $1.7 million over the past five years. The evaluation of the machine's performance was conducted by B.C. Tree Fruits Ltd. with the assistance of the Agriculture Canada Research Station in Summerland.

We interviewed representatives from B.C. Tree Fruits and the Research Station and reviewed file documentation. This indicated that:

- The hydrocooler did not appreciably alter the condition of the cherries. For example, this process had no significant effect in reducing the incidence of cherry decay.
- The installation of a hydrocooler was deemed to be not warranted at any of the other packing plants.
- The existing hydrocooler is still in the line and has not been used for the past two years for its intended purpose, primarily because of low cherry production.
- No applications for Part Four funding for additional hydrocoolers were received.

We therefore conclude that this project did in fact achieve its objective of determining the desirability of expanding the process. That is, it showed it was not desirable. However, the project did little to introduce known technologies to a new product nor did it help the industry take advantage of new opportunities.

Develop and Test New Technology

Four projects have addressed this "applied research" objective. The new technologies they were to develop and test ranged from a sorting machine for fruit growers to a non-destructive strawberry picker. Only one project, the Fruit Dehydrator project, was completed at the time of our study and we included it in our field survey of completed projects.

The Fruit Dehydrator project had the following objective:

> To develop and test a commercial size fruit dehydrator (in Summerland) that will eventually be put into commerical operation to produce fruit leathers and dried fruit.

The prototype fruit dehydrator was built in 1979 by a local firm and was tested by the Summerland Research Station. We interviewed representatives from the firm that requested this ARDSA assistance and a member of the Summerland Research Station. We also reviewed evaluations that had previously been done on this study. We concluded that this project met its own objectives and those of Part One. For example:

- The project actually did develop and test a new technology (i.e. the dehydrator) that could economically produce fruit leather from fruit puree.
- The results were disseminated to the industry. For example, Canada Agriculture published an article entitled "Development of a Commercial Fruit Dryer". The Summerland Research Station produced a lengthy research paper entitled "Drying of Fruit Purees".
- There was a successful request for Part Four funding under ARDSA to set up the actual full scale production facilities for fruit leathers.
- Another similar dehydrator is being developed and tested for another company, Edible Dried Goods in Penticton.

Conduct Feasibility Studies

There were four studies in Part One to examine the feasibility of new ventures in such areas as:

- The construction of a Food and Agriculture Exhibition Centre to act as a focal point for western agriculture.
- The treating and marketing of fence posts in B.C.
- The establishment of a produce terminal for Vancouver.
- The production and marketing potential for Chinese mushrooms in B.C.

All four were completed at the time of our evaluation. We did not select any of these projects in our field survey. However, the Data Sheets indicate that all four projects were successful in meeting their own specific objectives, that of analyzing the feasibility of a new product or service:

- The Chinese Mushroom Feasibility Study concluded that the growing and marketing of these mushrooms in B.C. is practical and economically feasible. There was no information in the files as to whether this opportunity was acted on.
- The Fence Post Study and the Vancouver Produce Terminal Study concluded that these proposed opportunities were not feasible.
- The remaining study, the Western Agriculture Exhibition Centre, concluded that such a centre was feasible under certain conditions but to date no such Centre has been established.

Identify, Analyze and Support Market Opportunities

There were nine Part One projects which examined market opportunities in the agriculture industry. They included such diverse studies as:

- An examination of the status and opportunities in the rabbit industry.
- An analysis of oyster canning costs and an evaluation of the opportunities of oyster canning in B.C.
- A project to foster and encourage the opportunity to create a queen and package bee industry in B.C.

Our field survey examined the Swine Industry Study. This study had the following objective:

> To examine various aspects of the live hog and pork industry to identify opportunities for increased production ....

The study demonstrated that the B.C. Pork Industry could be competitive and that opportunities existed. It appears however that the Swine Industry rejected and ignored the report. We were told that no actions have been taken based on its recommendations. One representative said he "... has made absolutely zero use of any opportunities identified in this study".

In the words of one industry representative, a major reason for the project's lack of success in helping to meet ARDSA's overall objective was its "deplorable" timing. (Chapter Eight examines this "timeliness" issue in greater detail.) The study was originally requested by the Swine Breeders Association in September, 1977 and had a great degree of urgency attached to it. The report was to be completed in early June, 1978 but the Swine Breeders Association did not receive the final report until November, 1979, 17 months late and more than two years after making the original request for ARDSA assistance. During this two year period, the pork industry in B.C. "was able to sort out its own problems". It went through a rapid period of expansion, thus calling the study's relevance and usefulness into question. The final report went to the Association but was never issued as a public document. The federal and provincial governments were not in agreement with many of the recommendations made in the report and had some serious concerns about some of the report's conclusions.

The Data Sheets provided information on actual results for three other projects:

- The Marketing Opportunity Identification Study focussed on vegetables and identified opportunities for 11 different commodities: cauliflower, cabbage, beets, yellow onions, broccoli, brussel sprouts, carrots, parsnips, rutabagas, tomatoes, and asparagus. The Data Sheets did not indicate what opportunities have been acted on or if any new ventures have been established and jobs created.

- The Naramata and Lake Area Study provided advice on better fruit handling and as a result, it was reported that improvements have been made to the processing facility under a Part Four ARDSA project.

- The Accelerated Grape Certification Project has apparently resulted in more virus-free grape stock being produced.

Establish Testing and Demonstration Facilities

In addition to providing funds to support the actual testing and demonstration of new technologies and products, Part One has also supported two projects whose purpose is to establish facilities and equipment which in turn are to be used to conduct a broad spectrum of testing and demonstration projects. These projects are:

- The establishment of a facility which will test and demonstrate on a commercial scale the production of different varieties of tree fruits. This project will terminate on December 31, 1982.
- The development of a facility for the Broiler Industry which will demonstrate to producers the impacts of new technologies on production efficiency. This project was due to be completed in March, 1981 but was not completed at the time of our evaluation. We were told that this facility is being established, that testing is already underway at the Broiler Demonstration Centre, and that results are being communicated to the B.C. Broiler Marketing Board.

3.5 OBJECTIVE TWO : TRAINING

Part One had a definite training objective:

> To develop, provide and evaluate various forms of training that will improve the productivity and efficiency of labour and mangement in the agriculture industry, both on and off the farm.

Four Part One projects pursued this objective. The emphasis was on improving the financial management skills of personnel in the beef industry. Three projects were complete at the time of our evaluation and we examined two in our field survey: the Financial Management Training Project for Beef Producers and the Mobile Farm Management Clinic.

The $46,000 Mobile Farm Management Clinic was an experimental project whose objective was:

> To test the effectiveness of a mobile farm management clinic in delivering special training to farmers in remote areas and to develop new systems and farmer-management-training tools for extension and education.

The clinic itself had three main objectives:

- To deliver a concentrated and intensive package of farm management skills (the specific "package" chosen was financial management to beef producers in the Kamloops area).
- To make this service available in highly mobile ways as near as possible to the producers' own (remote) locale (a trailer was selected as the way to obtain a mobile classroom).
- To begin developing better ways to assess the effectiveness and impact of such programs.

Our interviews with the Clinic's instructors, designers and evaluators indicated that both the Clinic and the project met their specific objectives. For example:

- The need to take training to farmers in remote areas was demonstrated. It was further shown that local facilities (rather than the trailer being tested) were more appropriate for such training.
- Teaching aids, case studies, delivery mechanisms, curriculum structures, evaluation techniques, etc. were developed and are now being used in other training and extension programs for a variety of community groups. (It should be noted that this was one of the few ARDSA projects we reviewed that had an evaluation component built in before work began.)
- Participation goals were exceeded.
- This project (plus the one described below) provided the cornerstones for Part One's current half million dollar Financial Management Training program.

The second training project we reviewed was the Financial Management Training Course for B.C. Beef Producers. The objective was:

> To upgrade the financial management capability of B.C. beef producers through a provision of a financial management skills training program.

It was thought that B.C. cattlemen completing such a course would acquire skills which would permit them to increase efficiency and profitability and thus make them better able to meet challenges of changing social and economic conditions.

We spoke with course participants, administrators, evaluators and designers. We did not find any information to indicate whether the financial management capability of participants had indeed been upgraded or if such new skills had in fact been applied to increase efficiency and profitability. However, we concluded that this project had a number of useful results:

- A total of 99 beef producers attended the courses given in eight different locations.

- The project developed course material, delivery mechanisms, teaching aids, etc. that are now being used in other training and extension programs.

- Course participants considered the course useful to the extent that they have proceeded to take more advanced training in another Part One project (the Financial Management Training Program).

The two training projects which we did not review are:

- The Financial Management Training Program is a $524,400 project due to be completed on March 31, 1982. This three year project has provided financial management training to commodity groups across B.C. For example, in 1980/81, cattlemen, dairy farmers, orchardists, nursery and vegetable growers were offered courses by the project. In that year, there were 433 students receiving such training and 1,740 student-days. Cattlemen are the primary course participants with 44% of the courses offered to this group. We were told that skill tests are given at the course to evaluate the student level of knowledge in the area of financial management before and after the course. These tests indicate that participants' financial management skills have increased as a result of the courses.

- The Group Counselling and Informal Training for Rural People project was to make possible improvements to productivity, efficiency and effectiveness for people in agriculture in rural areas. This ranged from sessions for trappers to branding demonstrations. Data Sheets indicate that there were at least 2,365 participants in such sessions.

3.6 OBJECTIVE THREE : PLANNING

The third working objective for Part One is:

> To provide effective rural planning by geographical area and commodity.

Upon reviewing the eight Part One projects pursuing this objective, it became clear that there were really two distinct sets of projects. The first set of projects attempted to design and develop planning "tools" that could then be used for ARDSA planning. The remaining projects were to actually develop the needed Regional or Commodity Plans. We will examine separately each set of projects.

Development of Planning Tools

There were six Part One projects whose objective was to develop some type of tool that could be used in planning. We examined the biggest such project, the $115,000 Regional Development Plans for B.C. Agriculture project.

It was intended to produce two important planning tools. The first tool consisted of Regional and District Profiles which were to detail the province's resource base and infrastructure and identify general areas of agricultural opportunity for agricultural production to meet local, regional, provincial and export markets. Such profiles were prepared for five Agricultural Reporting Regions and 18 Agricultural Districts. We surveyed field personnel to assess the use of these profiles. They indicated that the profiles were very valuable as a data base in promoting or describing their particular area. They were unable to identify any specific opportunities that had been acted on as a result of the profiles.

The second tool was a linear programming model which was designed to assist field staff in the preparation of Regional Plans. The model was used once in a pilot study in the Peace River Region to produce a Plan. It has not been used since for Regional planning. Very few of the field staff with whom we spoke were familiar with the Plan or the model and because of the highly technical nature of the planning model being proposed, none expressed confidence in being able to use it to prepare Regional Plans.

It is also important to point out that the original intention was to have these tools developed and tested within nine to twelve months of starting the project. Unfortunately, they were not in place until 41 months into the project. (Chapter Eight examines this overall "timeliness" issue in greater detail.)

There were five other planning tools to be developed under Part One (we did not survey them):

- The Policy Analysis of the Beef Industry was to design a simulation model to determine the consequences of current and potential government policies and programs. It took 33 months to complete and was 15 months late.

- The Goals for B.C. Agriculture project raised expectations that goals would be established but in effect, this study was to establish a framework for setting goals. This framework would then be used to "provide a foundation for policy and program development, analysis and evaluation". This project took 17 months to complete and was 11 months late.

- The Agricultural Land Inventory Upgrading project was to provide a data base on effective land availability throughout B.C.

- The B.C. Food System Statistics project was to produce statistics on production, imports and exports. This project was to finish on September 30, 1981 but was not complete at the time of our evaluation.

- The final tool is an Input-Output Model for the B.C. Agricultural Economy. This project is to be finished by December 31, 1982 and will require 20 months to complete. The model will hopefully facilitate the assessment of the impacts of new investment projects and policies, and the identification of opportunities, market size, and gaps in local supply and demand.

Development of Regional and Commodity Plans

There were only three actual planning projects. All were complete at the time of our evaluation and we included all three in our field survey.

The Beef Industry Study (Phase II) was the only planning study to have some measure of success. (It was an extension of a previous study which examined opportunities in the industry.) Its major objective was to produce and disseminate a Strategic Plan for the intensification and expansion of B.C.'s beef industry. The study did produce the requested Plan. (The original intent was to have the Plan available in June, 1979. The report was not complete until March, 1980.) The resulting Strategic Plan identified the general approach to be followed for intensification, and the major elements, requirements and priorities that can provide a basis for discussion, refinement and ultimately, agreement and commitment by all segments of the B.C. beef industry.

The planning process used in the Beef Study required the active involvement, through seminars and workshops, of a number of participants in the industry. Through these initial meetings, we were told that producers became aware of the opportunities in the industry and took action (eg: construction of new or expanded feedlots). Some people we spoke to regarded this discussion and dialogue as "the only visible benefit that we may see for some time". Although there was active industry participation at the beginning of the planning process, there were few if any seminars, workshops, etc. with the producers to explain and discuss the final Plan.

A representative of the B.C. Cattlemens Association said that the study was accepted by the industry and that "All kinds of things happened following the report". He believed the study's recommendations would have been implemented more quickly except for the downturn in the industry and the economy. He has noticed an upsurge in backgrounding and in the number of feedlots. For example, he pointed out that the number of cattle shipped out of the province is down to 60,000 per year whereas in previous years it had been up to 100,000. He was not able to identify the role of the Strategic Plan in such a significant result but he did believe that producers and government officials were now talking more about factors to favour retention.

A major beef producer who had an important role in the Beef Study identified several impacts that he believes can be attributed to the Strategic Plan:

- The fertilization of increased range land has been done to demonstrate that it can return profits from capital investments.
- Two or three more feedlots have been established (the two largest that he referred to did not require Part Four funding under ARDSA).
- This particular producer regarded his own operation as a model of the recommended intensification program. He said he had turned barren land into production and expects to finish 9,000 additional head this year.
- The Plan encouraged the financing aspect of capital development by making lending instruments available.

We also examined two other Part One planning projects. They did not achieve their objectives:

- The previously-discussed Regional Development Plans for B.C. Agriculture project was "to prepare Regional Development Plans for each of the eight agricultural reporting regions of B.C. and for specialized sub-regions". This project encountered serious management and administrative problems and only one Regional Plan was produced. This was a "pilot plan" for the Peace River Region which used the linear programming model referred to earlier.
- The Swine Industry Study (previously referred to in an earlier section) was to identify opportunities for increased production and "... to produce a long range development strategy for the pork industry". No such Strategic Plan was produced.

3.7 OBJECTIVE FOUR : ASSISTANCE TO OTHER ARDSA PARTS

This working objective for Part One is:

To facilitate the implementation and evaluation of all ARDSA Parts.

There were 11 such projects, eight of which were to assist in ARDSA's implementation while the other three were of an evaluation nature.

Implementation Assistance

Of the eight implementation projects, six were in support of Part Three. These included:

- The Fraser Valley Irrigation Design Criteria project.
- The Saanich Peninsula Irrigation project which surveyed the area's irrigation requirements and water supplies and which led to an economic analysis under Part Three.
- The District of Kent Drainage study which was an engineering and economic feasibility study and led to a major Part Three project.
- An examination of the Pemberton area which determined the economic feasibility of erosion and flood control in this area. This in turn led to another Part Three feasibility study.
- The Similkameen Indian Band Economic Feasibility Study which addressed the economic feasibility for a Part Three project.

The final project in support of Part Three implementation was the largest and was included in our survey. It consisted of economic and engineering feasibility studies which were done before any Part Three funding was approved. The studies attempted to develop innovative engineering solutions to difficult irrigation and drainage problems. They also examined the costs and benefits of such solutions. We spoke with field engineers and program managers about the role and usefulness of such studies. They agreed that the studies' objectives had been met and that they received the engineering information and economic analyses that they required.

There was only one Part One project on behalf of Part Four. It was included in our field survey and consisted of 84 financial feasibility studies that were completed by outside consultants before Part Four funding was approved. The program manager indicated that the studies' objectives have usually been met and that the results were useful in making the funding recommendations.

The final "implementation" project was the ARDSA Organizational Structure Study which identified ARDSA's organizational and staffing requirements if ARDSA were to be implemented efficiently and effectively.

Evaluation Assistance

To meet one of the Agreement's stated requirements, three inter-linked projects have been approved to assist in the evaluation of ARDSA:

- The ARDSA Evaluation Terms of Reference gave a general overview of the evaluation and suggested possible alternatives to fulfill the evaluation requirements in the ARDSA Agreement.
- The ARDSA Program Evaluation - Phase One which formed part of the basis for the current overall evaluation.
- The ARDSA Program Evaluation - Phase Two which is our current study.

3.8 OBJECTIVE FIVE : ENTREPRENEURSHIP

The fifth objective was:

To encourage the emergence of latent entrepreneurship.

A number of Part One projects indirectly addressed this objective by, say, attempting to demonstrate new technologies and market opportunities in the hope that new entrepreneurs would be encouraged to enter the industry. For the ten

Part One projects we reviewed, we found no evidence in the files nor via interviews that any new entrepreneur had been stimulated to enter the industry. The Data Sheets for the remaining Part One projects had no further information about new entrepreneurs entering this industry.

3.9 OBJECTIVE SIX : DISSEMINATION OF RESULTS

For those sampled projects in which dissemination of results was appropriate, it did take place and the appropriate organizations, associations, etc. were informed of the results via technical publications, newspaper and magazine articles, etc. For example:

- The report arising from the Swine Industry Study was provided to the B.C. Swine Producers Association but was not released for public distribution.

- The results from the Fruit Dehydrator project have been published in Canada Agriculture and the Summerland Research Station publications.

- Under the Regional Development Plans project, 300 copies were produced and disseminated for each of the 18 District profiles and five Regional profiles. The Pilot Plan for the Peace River Region had limited distribution outside government.

3.10 SUMMARY OF PART ONE'S IMPACT AND CONTRIBUTION

Part One has funded 57 diverse projects in an attempt to introduce a wide variety of new and existing technologies, products, skills and services to the province's agricultural industry. The beef industry is committed to receive 32% of the $4.8 million in ARDSA support going to Part One.

The focus of Part One's efforts has been on trying to help the B.C. agricultural and food processing industry take advantage of potential opportunities for increased employment and agricultural production. For example, Part One projects are attempting to demonstrate and transfer 11 known technologies ranging from abalone aquaculture to zero tillage techniques for grain growers. Four projects are attempting to pilot test the applicability and commerical viability of such known technologies as hydrocoolers and rangeland seeders while four "applied research" projects are developing and testing new technologies, primarily for fruit commodities. Part One also examined the feasibility of four new ventures (including the production of Chinese mushrooms and the treating and marketing of fence posts) and analyzed market opportunities for nine different product groups, including rabbits, bees, oysters and a variety of vegetable commodities. Two new demonstration facilities are also being established with Part One assistance, one for the broiler industry and one for tree fruit industry.

Part One has therefore made a significant effort to assist the agriculture industry in taking advantage of opportunities for employment and increased production. However, there is little evidence that this major effort has yet paid off in terms of exploited opportunities, new employment or increased production. One reason for the low level of measurable impacts to date is that many of the projects pursuing this objective are still not complete. For example, there was only one completed demonstration project at the time of our evaluation (the Mushroom Compost Replacement Demonstration project) and it did not achieve its objectives. The only completed pilot test of a known technology (the Cherry Hydrocooler) indicated that such technology was not feasible. We did not observe any instances in which Part One has been able to establish the commercial viability of an existing technology and to date only one new technology (the Fruit Dehydrator) has been successfully developed, tested and introduced to the industry. The one "market opportunity" study we surveyed (the Swine Industry Study) produced results that were not used nor deemed relevant by the industry. The feasibility studies were successful in making conclusions about the feasibility (or non-feasibility in two cases) of four different ventures, but to date there is little evidence that the feasible ventures have been pursued.

Part One has been successful in its efforts to develop, deliver and evaluate a number of training courses and concepts for more than 3,000 participants from the agricultural sector. Such training has primarily focussed on improving the financial management skills of personnel in the beef industry.

Although Part One has attempted to develop several planning tools, Part One's planning objective has not been met since little actual planning has taken place. Only one Regional Plan (for the Peace River Region) has been produced. Part One has produced only one Commodity Plan, a Strategic Plan for the intensification of the B.C. beef industry. It was generally well received by the industry and is believed to have stimulated activity in the beef sector. Part One attempted to produce a long run Strategic Plan for the Swine Industry but no Plan was developed.

Program managers in Parts Three and Four indicated that the Part One projects were successful in facilitating the implementation of their respective Parts.

CHAPTER FOUR

EVALUATION OF PART TWO: CO-ORDINATED RESOURCE MANAGEMENT

4.1 INTRODUCTION

The carrying capacity and under-utilization of Crown grazing lands provides a unique opportunity for increased forage production and utilization. However, in the past, there have been conflicts amongst users of this land resource. To resolve this problem, Part Two has two stated objectives:

> To develop and improve the grazing capacity of Crown Range in order to utilize the forage production of this resource.
>
> To optimize multi-use possibilities and therefore support and stabilize the beef industry in harmony with forestry and wildlife interests.

To achieve these objectives, 87 Part Two projects had either been implemented or were in the process of being implemented on December 31, 1981. The total approved costs for these Part Two projects was $14.5 million. BCMAF and DREE each contributed $6.5 million while it was anticipated that local range users, including 608 ranchers, from more than 100 range units would contribute the remaining $1.5 million. Table 4.1 illustrates the spatial diversification of this Part Two funding. Appendix A contains a detailed listing of all approved Part Two projects.

Before examining Part Two it is first important to define certain terms:

- A Co-Ordinated Resource Management Plan (CRMP) is the output of a process for planning the integrated use and management of renewable resources in B.C. A CRMP does not attempt to determine future land uses but rather co-ordinates the management of existing uses, primarily fish and wildlife, forestry, range, watershed and recreation, within the broad terms of existing statutes governing these resources.

- A Range (or Forage) Development Plan is a forage and livestock management plan for a specific land area in the province, usually a Range Unit.

TABLE 4.1

SPATIAL DIVERSIFICATION OF PART TWO PROJECTS

Regional District	Number of Approved Part Two Projects	% of Total Part Two Funds
Bulkley-Nechako	5	9.9%
Cariboo	17	17.1
Central Kootenay	1	.5
Central Okanagan	1	2.2
Columbia Shuswap	3	1.9
Comox-Strathcona	1	.3
East Kootenay	10	5.0
Fraser-Fort George	1	1.6
Kitimat-Stikine	1	.7
Kootenay Boundary	12	5.5
North Okanagan	2	1.1
Okanagan-Similkameen	8	16.1
Peace River-Laird	6	17.1
Thompson-Nicola	15	17.5
Not Applicable to a Specific Regional District	4	3.7
	87	100.0%

- A Community Pasture in B.C. is defined by the B.C. Ministry of Agriculture and Food as a sizeable block of crown land that has been appreciably cultivated, seeded to tame forage, and fenced with provisions made for watering and handling cattle so as to facilitate intensive management of user owned livestock. Each community pasture in B.C. is principally operated by a local association of user ranchers under "blanket" grazing permits. They are located in north central B.C. and Peace River areas.

- The Agricultural and Rural Development Agreement (ARDA) was the 1972-1977 federal/provincial program preceding ARDSA which provided initial funding for range and community pasture development.

- General Range Improvement (GRI) is a Ministry of Forests program which provides funds for Crown Range improvements.

4.2 WORKING OBJECTIVES

In developing a more concise and measurable set of working objectives we considered the following:

- It was clear in the Agreement that a goal was to improve resource management and planning via the implementation of high quality Co-ordinated Resource Management Plans (CRMP's). Although the Agreement specifically states that 220 such Plans were to be implemented, we were advised that the proposed number of Plans in the original negotiations ranged from 50 to 400 and that the real intention was to have a sufficient number of Plans to cover 220 Range Units.

- Another intent was to involve the resource users in the preparation and implementation of the Plans so that traditional rivalries could be discussed more openly and hopefully resolved.

- The Plans would call for certain projects, most of which were to be aimed at developing and improving the grazing capability and forage production of Crown Range.

- Once the physical improvements had been introduced (and this could take up to 60 years for some intended results to be realized), it was expected that the increased capability would actually be utilized.

- While these objectives were being met, it was the intent to also encourage and allow access to other users of the Range resource. Thus the ultimate objective was to support and stabilize the beef industry, subject to the need to consider and integrate the possibly conflicting interests of forestry, recreation and wildlife.

- Based on the above, we cannot stress strongly enough that the focus of the evaluation of Part Two was not on the planning process itself, but rather on ARDSA's role and input to the implementation of various plans. (By "implementation", we refer to the design and construction of the planned projects, not to the implementation of this Part of ARDSA.)

Table 4.2 presents the Part Two working objectives and performance indicators we established based on the above points. Figure 6.1 summarizes the way in which Part Two was intended to achieve its objectives and those of ARDSA in general.

4.3 FIELD SURVEY

We conducted a field survey of ten sampled projects. This involved interviews with more than 70 different participants. The sampled projects represent a range of Part Two activities including:

- Five CRMP's in widely diverse biogeoclimatic subzones, with varying uses and use conflict potential; totally ARDSA funded implementation.

- One CRMP in which implementation and pre-CRMP range improvements over the years were funded mainly by ARDA and GRI; ARDSA funding was provided for "cleanup" projects to complete the implementation.

TABLE 4.2

EVALUATION FRAMEWORK FOR PART TWO

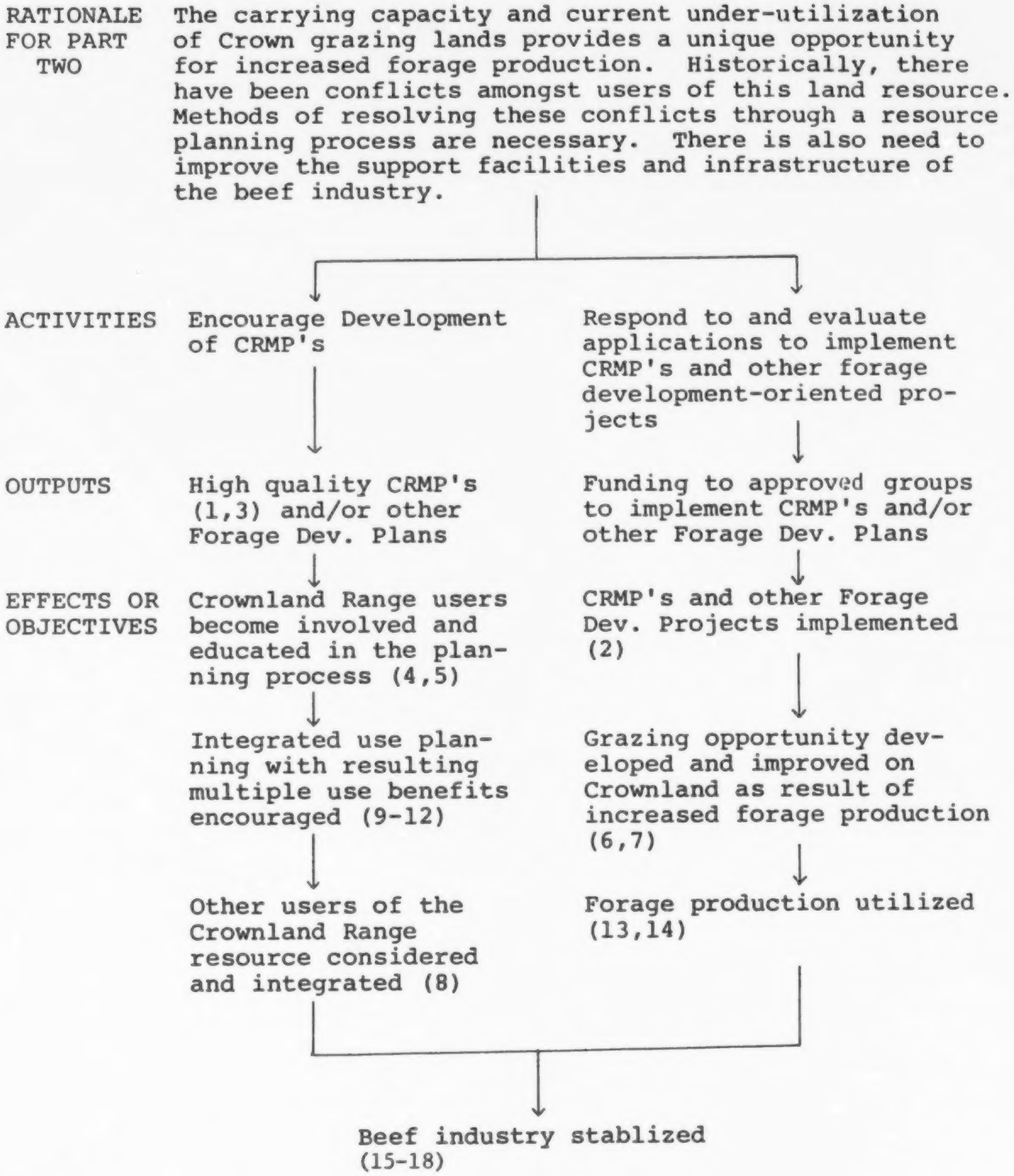
Working Objective	Associated Performance Indicators
1. To develop and implement high quality CRMP's in selected areas of B.C. with emphasis on increased forage and livestock production.	1. Number of Plans produced. 2. The degree of implementation of the Plans (eg: what % are fully implemented?). 3. Participants' assessment of the usefulness and quality of the planning and implementation process: were the right issues addressed, were the correct projects proposed, is this process an improvement?
2. To involve and educate the Range users in the planning process for resource management.	4. Number and affiliation of participants, from various agencies and user groups, in the whole planning process. 5. Assessment of the educational benefits to the participants.
3. To implement projects which develop and improve the grazing capability and forage production of Crown Range, including community pastures.	6. Quantitative and qualitative description of Range improvements arising from plan implementation 7. Number of AUM's saved or created as a result of plan implementation.
4. To encourage integrated resource use planning and multiple use benefits and to integrate other users of the Crown Range.	8. Description and magnitude of land use conflicts avoided or reduced as a result of plan implementation. 9. Changes in wildlife numbers and habitat. 10. Changes in water production quality and quantity. 11. Changes in integration of recreational use. 12. Changes in timber production values.

Table 4.2 Continued

Working Objective	Associated Performance Indicators
5. To increase the utilization of the Crown Range's forage production.	13. Utilization of the increased forage production capability.
	14. Increase in numbers and relative quality of livestock as a result of plan implementation.
6. To support and stabilize the beef industry (including Crown Range and home ranch) and yet respect the requirements of other users of the same or adjacent land base.	15. Quantitative and qualitative description of impacts of CRMP activities on the home ranch, including changes in forage production, herd management practices, further backgrounding and finishing, etc.
	16. Investment by private sector in additional facilities and infrastructure as a result of plan implementation.
	17. Type and number of new ventures established (or saved) as a result of plan implementation.
	18. Extent to which ranchers and other land users perceive greater stability as a result of plan implementation.

FIGURE 4.1

CAUSAL RELATIONSHIP FOR PART TWO



RATIONALE FOR PART TWO

The carrying capacity and current under-utilization of Crown grazing lands provides a unique opportunity for increased forage production. Historically, there have been conflicts amongst users of this land resource. Methods of resolving these conflicts through a resource planning process are necessary. There is also need to improve the support facilities and infrastructure of the beef industry.

ACTIVITIES

Encourage Development of CRMP's

Respond to and evaluate applications to implement CRMP's and other forage development-oriented projects

OUTPUTS

High quality CRMP's (1,3) and/or other Forage Dev. Plans

Funding to approved groups to implement CRMP's and/or other Forage Dev. Plans

EFFECTS OR OBJECTIVES

Crownland Range users become involved and educated in the planning process (4,5)

Integrated use planning with resulting multiple use benefits encouraged (9-12)

Other users of the Crownland Range resource considered and integrated (8)

CRMP's and other Forage Dev. Projects implemented (2)

Grazing opportunity developed and improved on Crownland as result of increased forage production (6,7)

Forage production utilized (13,14)

Beef industry stablized (15-18)

- One CRMP in which implementation funding has been through an ARDA-ARDSA combination.

- One Range Development Plan in which implementation has been a combination of ARDSA and GRI sources.

- Two community pastures with a long history of ARDA and ARDSA funding and activity.

The remainder of this Chapter identifies the extent to which these ten sampled projects met the Part Two objectives. For the reasons pointed out in Chapter Two, it is not appropriate to apply any of our conclusions to the entire set of Part Two projects due to the limited sample and the diverse mixture of the CRMP projects.

4.4 OBJECTIVE ONE : DEVELOPMENT AND IMPLEMENTATION OF CRMP'S

The first working objective in Part Two is:

> To develop and implement high quality CRMP's in selected areas of B.C. with emphasis on increased forage and livestock production.

As stated previously, it was not clear how many Plans were to be implemented nor for how many Range Units. In recent documentation, we note that the program manager is projecting approximately 120 CRMP's by the end of the Agreement.

At the time of our evaluation, 87 Part Two projects had been approved and only 17 such projects were classified as "complete". It was not possible from the Data Sheets to assess the degree of implementation of the other projects.

Our sampling of more than 70 different CRMP participants (ranchers, government managers, etc.) in ten different projects provided a significant range of viewpoints regarding the usefulness and quality of the Plans. For example:

- In the Yahk Range Unit, the reaction was unanimously positive. The perception was that the Plan was practical and had proposed the correct projects (although some fences were not thought to be necessary). The process was regarded as a positive improvement and the Yahk Grazing Association was taking a leadership role.

- In the Parker-Felker-Onward Range Unit, there was general agreement that the Range Development Plan has worked successfully to date. One participant resource manager indicated extreme reluctance to involve himself in CRMP's because of what he perceived as the bureaucracy and time constraints of the CRMP-ARDSA combination. He expressed a comment frequently heard in several CRMP's that "The process results in too much ARDSA implementation money being wasted". He, like several others in our evaluation, believed that there was no real interest in the Plan, that most of the CRMP's in the Cariboo were completed only to get access to funding, and the multiplicity of agencies, users and public groups were all on "power trips".

- The Wren Community Pasture was the first Interior pasture funded under ARDA. The quality of the initial projects at Wren were not deemed high by participants in many cases.

- The Sunset Prairie Community Pasture has a Plan which appears to have addressed the appropriate issues, according to the users and agencies co-operating, and implemented the correct projects. The CRMP process has been followed in general terms with annual reviews.

- At the Beaverdam Range Unit, we encountered a wide range of responses regarding the usefulness and quality of plans, whether the appropriate issues had been addressed and the correct projects proposed. The spectrum of comments was from totally negative to totally positive.

- The CRMP for Old Timber's Mountain appeared useful and acceptable to a wide range of participants, although it was admitted that compromises were obviously made in terms of action steps. All the participants with whom we spoke considered the process an improvement, but each feels the other users got a little better deal!

- Most participants at the Dutch-Findlay Range Unit questioned the usefulness and quality of the Plan. They agree that the planning process has been improved and accept the basic principles but stated that the implementation of the Plan has not been smooth. There was no consensus on whether the correct issues had been addressed and correct projects proposed.

- It was difficult to assess this issue at Tremont Creek because there were no annual Plan reviews. The ranchers and the forest industry were pleased with the Plan and considered it useful and an improvement in the process. Other users were more skeptical.

Although evidence based on the ten sampled projects is inconclusive, the general consensus is that the sampled Plans have been of acceptable quality. There is a great diversity of opinions as to the usefulness of the Plans. The following quotes are typical of the disparate opinions on the usefulness of the whole implementation process:

- "The rush to the golden pot at the end of the trail has sometimes blinded the user sitting around the plan preparation table."

- "The CRMP process and ARDSA implementation funding are inseparable - both are necessary if we are to meet the objective."

- "CRMP's are good and ARDSA good but the two together not so good."

- "We have too many good plans that stay on paper only; ARDSA money was a way of getting on with the job."

- "Talk of 220, high quality plans in just a few years with money waiting to be spent to subsidize a lifestyle is an irresponsible use of taxpayers' money."

- "Something had to happen to reduce range use conflicts and poor forage management and utilization; from the ranchers' point of view CRMP-ARDSA saved many of our businesses."

- "ARDSA money has in some ways been negative to Co-ordinated Resource Management Planning. The Plan is being used as an excuse to get the money quickly."

4.5 OBJECTIVE TWO : INVOLVEMENT AND EDUCATION OF RANGE USERS

The second working objective for Part Two is:

> To involve and educate the Range users in the planning process for resource management.

Without question, the "participation" objective has been met in the ten CRMP's we reviewed. There was a wide range and diversity of participants from various agencies and user groups in the whole planning process. Table 4.3 summarizes this level of involvement in the ten CRMP's we reviewed and summarizes the educational benefits derived from the process by the participants.

Comments regarding educational benefits were usually positive, even from the "non-believers". Typical comments include:

- "We see each other's points of view clearer and learn to understand each other's resource needs as well."
- "With a wide diversity of interests in the group it is amazing how much we have learned from each other sitting around one table."
- "Education benefits are number one and they alone justify the program."
- "Communications and education opportunities are available through CRMP and review meetings that would not likely otherwise exist."
- "The CRMP process has continuing educational benefits for all involved i.e. the rancher's understanding of forestry is improved and vice versa. In addition, tension between association members has been reduced through the Plan mechanism."
- "We are learning about our own resource through association with other users."

TABLE 4.3

INVOLVEMENT AND EDUCATIONAL BENEFITS

	Sampled Project	No. of Ranchers	Min. of Agr. & Food	Min. of Forests	Min. of Lands	Min. of Env.	Forest	Other	Education Benefits
1.	Yahk Range Unit	5	Yes	Range Br. Timber Br.	Land Mgt. Br.	Fish and Wildlife Br.	Crestbrook Forest Industries	No	Highly regarded; seen as an opportunity to learn practical range management.
2.	Dutch-Findlay Range Unit	2	Yes	Timber Br. Range Br.	Land Mgt. Br.	Fish and Wildlife Br.	Crestbrook Forest Industries	ELUC Secretariat	Some benefits due to reducing open confrontations; spirit of integration appears lacking.
3.	Grasmere Range Unit	12	Yes	Range Br. Timber Br.	Land Mgt. Br.	Fish and Wildlife Br.	No	No	Not applicable.
4.	Kettle Valley South-Rock Mountain Range Unit	4	Yes	Range Br.	No	Fish and Wildlife Br.	Pope and Talbot Ltd.	No	Regarded as a positive continuing educational opportunity.
5.	Old Timer's Mountain	3	No	Range Br.	Land Mgt. Br. Parks Br.	Water Mgt. Fish and Wildlife Br.	No	Okanagan-Similkameen Parks Soc.; South Okanagan Sportsman's Assoc.; South Okanagan Naturalists Club; Reg. Dist. of Okanagan-Similkameen	All felt positive about educational benefits and increased communication opportunity

TABLE 4.3
(Continued)

	Sampled Project	No. of Ranchers	Min. of Agr. & Food	Min. of Forests	Min. of Lands	Min. of Env.	Industry	Other	Education Benefits
6.	Tremont Creek	1	Yes	Range Br. Timber Br.	No	Fish and Wildlife Br.	Evans Products	No	Limited to initial plan preparation; little evidence that further multidisciplinary communication takes place.
7.	Beaverdan Range Unit	3	Yes	Range Br. Timber Br.	No	Fish and Wildlife Br.	Ainsworth Lumber Co. Ltd.	No	No evidence of benefit because of rapid user turnover.
8.	Parker-Felker-Onward Range Unit	3	Yes	Range Br. Timber Br.	No	Fish and Wildlife Br.	No	No	Few direct benefits observed.
9.	Wren Community Pasture	25	Yes	Yes	Yes	Yes	No	No	Some benefits but primarily limited to specific problem solving.
10.	Sunset Prairie	35	Yes	Range Br.	No	Fish and Wildlife Br.	No	No	Limited to specific problem solving.

A minority of participants did agree that educational benefits arise from the apparent reduction of open confrontations, but they believed that the spirit of integration appears lacking. A typical comment was "Although Plan meetings are quiet and everyone nods in agreement, agencies or industry go ahead and do as they please anyway". However, this minority also agree that all participants (ranchers or otherwise) have a true "up front" direct involvement in the planning process.

4.6 OBJECTIVE THREE : GRAZING CAPABILITY AND FORAGE PRODUCTION

This Part Two working objective is:

> To implement projects which develop and improve the grazing capability and forage production of Crown Range, including community pastures.

All users and resource managers agreed that this was a definite objective, although depending upon specific use, the degree of interest in achieving this objective was varied.

We were told of a diverse range of proposed improvement projects, most of which were being implemented:

- The physical improvements at the Parker-Felker-Onward Range Unit include 16 miles of fencing, 5 cattleguards, 12 water developments, the repair of a bridge, and water and beaver contol.

- Projected improvements at the Tremont Creek Range Unit include 11.5 miles of fencing, 3 cattleguards, 9 water developments, 7 miles of trails, 1,000 acres of prescribed burning, 450 acres of seeding and 240 acres of chemical control.

Due to the size of the Range Units and Pastures being surveyed and the snow cover on most projects, we did not have an opportunity to physically inspect the physical improvements at the sampled projects.

We also attempted to examine the impact of these physical improvements on the range condition. Although little range condition inventory information is available, (Chapter Eight discusses this issue in greater detail), most users and administrators in the ten sampled projects agree that the range condition has improved and continues to improve, in part as a result of ARDSA. For example:

- In the Yahk Range Unit, the range condition was considered much improved, particularly in previously overgrazed areas. Some seeding projects had taken place. The implementation of the various CRMP improvement projects allowed better cattle distribution and thus the administration is more disposed to increased use.

- At the Dutch-Findlay Range Unit, range conditions are somewhat improved as a result of recently implemented rotational grazing. The forest industry seeded 72 hectares (180 acres) and 20 hectares (50 acres) of the Dutch pasture have been seeded.

Ideally, it would have been useful to measure the impact of these range improvements on forage production and grazing capability, as measured by increases in Animal Unit Months (AUM's) attributable to ARDSA. As expected, we found it difficult if not impossible to assess and measure specific, quantifiable impacts arising from these range improvements. There are three reasons for this situation:

- We agree with most users and resource management professionals that because of the time horizon for such improvements, it is still premature to expect quantitative data directly attributable to the ARDSA program. Some of the ARDSA funded improvements will not generate meaningful impacts until 60 years from now.

- There is a lack of appropriate base line data from which to start measurement. For example, the range condition classes at the point of initiating the ARDSA program are not known.

- There are a multitude of external factors (weather, previous programs, technical and management skills of users, administrators, etc.) that could potentially influence forage productivity.

In the absence of any real credible data on the actual number of Animal Unit Months (AUM's) attributable to ARDSA, Table 4.4 summarizes the projections found in the Data Sheets for the ten surveyed projects. For example:

- In the Yahk Range Unit, there had been no sustained planning of grazing use prior to the CRMP. The Ministry of Forests estimated a loss of 240 AUM's by 1982-83 if the CRMP had not been implemented. However, CRMP participants were skeptical of the projections of 882 AUM's being saved and 1,068 AUM's being created due to ARDSA funding. No data on actual results were available to support these projections. (It should be noted that these projected AUM increases form the basis for approving ARDSA funds for proposed Part Two projects. We did a brief "audit" of the Yahk project, and only the Yahk project, to determine how these numbers were generated and used. We identified an arithmetical mistake that results in a 39% over-statement of the additional AUM's to be created because of the CRMP. That is, the true projected increase in AUM's was 768, while the (incorrect) figure used in the application and evaluation process was 1,068 AUM's. Such a mistake tends to lessen the credibility of the projected AUM increases.)

- At the Dutch-Findlay Range Unit, there was estimated to be a probable reduction of 1,250 AUM's if the CRMP had not been implemented, due to prior management deficiencies. There had been a shift of AUM's from one user to another but no overall increases had been permitted to date.

4.7 OBJECTIVE FOUR : INTEGRATED AND MULTIPLE USE

This working objective for Part Two is:

> To encourage integrated resource use planning and multiple use benefits and to integrate other users of the Crown Range.

This working objective is regarded as being successfully met in the ten sampled CRMP's. On reviewing the ten Plans and the annual reviews of these Plans, we found that many problems and conflicts have been resolved. We also obtained

TABLE 4.4

IMPACT OF PART TWO ON GRAZING AND FORAGE IN THE SAMPLED PROJECTS

CRMP	Projected Change in AUM's due to Implementation of Plan			Did Appropriate Data Exist for Actual Results?	Did Participants Consider Projections Realistic?	Comments
	Saved	Created	Other Changes			
1. Yahk Range Unit	882	1,068	No extension of season; 10% AUM increases were allowed on the Range Permit for 1979 and again in 1982.	No	No They were regarded as skeptical.	The Ministry of Forests estimated a loss of 240 AUM's by 1983 if CRMP had not been implemented.
2. Dutch Findlay	1,250	X	X	No	Yes	No increases permitted to date.
3. Grasmere Range Unit	834	565	1,119 from extended seasons.	No	Yes	50% of livestock from Range Unit grazed on government-owned Steeples Ranch Pasture.
4. Kettle Valley	114	61-111	X	No	Yes	No increases in permits.
5. Old Timer's Mountain	1,203	1,236	5% AUM increase allowed on range tenure by Ministry of Forests.	No	Yes	5% AUM increase allowed on range tenure by Ministry of Forests.
6. Tremont Creek	172	280	X	No	Yes	$4,900 in feed cost saved due to longer season with the CRMP.

Table 4.4 Continued

CRMP	Projected Change in AUM's due to Implementation of Plan			Did Appropriate Data Exist for Actual Results?	Did Participants Consider Projections Realistic?	Comments
	Saved	Created	Other Changes			
7. **Beaverdam Range**	X	573	1,515 Through extended season.	No	No	Participants believe that considerable new AUM's have been created but not allocated because of rapid turnover in ranchers and administrative staff.
8. **Parker-Felker-Onward Range Unit**	X	840	X	Yes	Yes	All users have received increase in AUM's through permits Total: 667 AUM's.
9. **Wren Community**	X	3,000	X	No	Yes	Decrease to 400 AUM's by the year 2000 estimated on the area to be improved due to forest succession.
10. **Sunset Pasture**	X	5,840-7,177	X	No	Yes	The projected carrying capacity is 17,000 AUM's.

enough evidence to support the view that, in the majority of cases, use considerations for wildlife, recreation and timber were well integrated. (We lack enough information on water resources to assess whether this has in fact been the case with this resource as well.)

For example, at the Yahk Range Unit, the CRMP helped resolve a serious over-grazing situation that had arisen prior to the CRMP due to poor cattle distribution. According to participants, ARDSA funding enabled creeks fenced and protected from cattle impacts, integrated timber harvesting and grazing use (rotation), closure of the timber harvesting access road to protect wildlife resources from harassment and over harvest, attempts to monitor ATV use and vandalism, and the fencing of the provincial campsite. Problems of beaver control, clearcut seeding and vandalism still need attention.

Managers stated that the general fish and wildlife habitat at Yahk is improved and should continue to improve, although not necessarily related to CRMP implementation. Although no data on actual changes in wildlife numbers were available for Yahk, the projections in the Data Sheets call for an increase in the moose population from 200 to 300, for elk from 200 to 400 and for deer, from 200 to 300. (Similar significant increases in wildlife population were noted at the Dutch Findlay Unit, most of which are due to ARDSA-funded range improvements.)

According to Yahk participants, the water quality in fenced creeks has improved, resulting in improved fishing opportunities. Integration of recreational use has been encouraged by establishing cattle control during berry picking season and by fencing the provincial campsite, including the development of specific camping sites within the Plan area.

There were no reported benefits concerning timber production values at Yahk. There was some concern with seedling damage, suspected due to livestock browsing. There was also concern with sustainable forage production in this moist, rapidly re-generating forested environment.

At the Kettle Valley Range Unit, we were informed of better livestock distribution, improved livestock water supply, access planning initiated, livestock access along old railway beds being controlled, a public information program undertaken to explain Plan integration, and fencing of private lands to reduce conflicts.

Multiple use benefits at Old Timer's Mountain included the establishment of a long-considered ecological reserve. The integration of agricultural, waterfowl and fishing uses on the Osoyoos wetlands was much improved and the wildlife impact on orchards reduced through progressively improved range habitat.

To quote some representative comments from those interviewed during our survey:

- "The problem of different cattle management techniques between my neighbour and I is no longer a problem because the new fenced pasture arrangement and grazing rotation means we can keep the two herds separately".

- "We have found that many things we thought were conflicts were resolved by planning group discussion and compromise in about ten minutes."

- "There will be no real end to conflicts, but we now have a way of resolving them."

It might be noted, however, that a minority of those interviewed felt that CRMP's and their implementation had actually created some new conflicts. For example, some participants believe that fish and wildlife proponents have a "new sense of power" with the CRMP's and some overuse it to the detriment of livestock use of the range.

4.8 OBJECTIVE FIVE : INCREASED UTILIZATION OF FORAGE PRODUCTION

This working objective is:

To increase the utilization of the Crown Range's forage production.

This objective appears to have been realized in most of the ten CRMP's we reviewed. There was only one case in which there was under-utilization and we were advised that this relates to an unusual ranch turnover situation. In most other cases, use demand exceeded the present permitted supply. For example, use requests at the two community pastures we sampled were recently turned aside.

There was no information available on actual increases in the number and relative quality of livestock that could be related to ARDSA directly. Projected results (eg: calf weights) contained in the Data Sheets were regarded with a great degree of skepticism by some experienced participants and thus in our opinion do not represent a reliable data base for the purpose of our evaluation. We recommend that ARDSA staff investigate the roots and impacts of this discrepancy between local perceptions and the numbers used in ARDSA applications.

One possible way to examine ARDSA's impact in this area is to examine the number of head owned by participants when they applied for CRMP funding and compare that figure to current levels. This approach certainly identifies any changes but there are so many other factors at work that the role of ARDSA in generating any such impacts can not be reliably estimated.

4.9 OBJECTIVE SIX : STABILIZATION OF THE BEEF INDUSTRY

This sixth working objective for Part Two is:

> To support and stabilize the beef industry (including Crown Range and home ranch) and yet respect the requirements of other users of the same land base.

No one questioned this as an important ARDSA objective. However, we had difficulty in obtaining data on actual results that could be attributed to ARDSA. Certainly a consensus exists with respect to increased stability of the industry. For example:

- At Yahk, all participants perceived greater stability. A new user of the Yahk Unit said "Moving to a planned unit from an unplanned one is like getting promoted".

- At the Parker-Felker-Onward Range Unit, there was a belief that association with the Plan had added value to the ranch units.

- At Wren Community Pasture, users feel dependence upon the pasture for the economic viability of their production units. There was a suggestion that many units in the area would be cut in half if not for the improved community pasture.

- At the Sunset Prairie Community Pasture, the producers are dependent on the pasture as an integral part of their production units. We perceived stability since there has been practically no turnover in users.

The consideration of Part Two's impact in terms of investment is considered premature at this time or difficult to separate the ARDSA portion. In any event, there was little data available on actual results.

With respect to the impact on the home ranch, there was a wide variety of opinions, ranging from nil impacts attributable to ARDSA to total dependence upon the summer pasture or range base provided by the program. Such impacts can only really be measured over the long range from a known base line which does not yet exist. However, it will always be difficult to separate ARDSA benefits from others.

4.10 INCREMENTAL ROLE OF PART TWO

Our consensus from the ten sampled projects is that the results and impacts described in this Chapter would not have been obtained without ARDSA funding, particularly in such a short time frame. Part Two acted as a catalyst to bring participants together. The following quotes are representative of most of the participants:

- "Without ARDSA it would have taken years to implement the Plans, if ever. With this funding we have new opportunities to improve our industry within a reasonable time frame."

- "If ARDSA had not come along, we would have moved slower on range improvements, but perhaps we would have been more cost efficient."

- "The cow head numbers in our area would not have been maintained let alone increased without ARDSA funding for community pasture development."

- "The increase in user-manager communications and education, which is perhaps the most important benefit, just would not have happened without the ARDSA-CRMP implementation carrot."

As stated previously in this Chapter, we believe it is perhaps premature to attempt to assess ARDSA's incremental role in increasing forage productivity in the absence of base line data. Some typical quotes from professionals and experienced participants support our view:

- "No rancher can develop a range in less than a ten year time frame and to evaluate actual benefits in a couple of years, particularly with weak base line data, is premature. Look at the Validation Study in Oregon which has been going on for a number of years."

- "A decrease in AUM's could be a positive benefit if range condition is improved and other users are in turn satisfied."

- "The process of Co-ordinated Resource Management Planning has only been in existence in B.C. for some six years. The physical changes which have been initiated by Co-ordinated Resource Management Planning may take 20 to 60 years to reach fruition. It is therefore essential that any evaluation using present day information be regarded as an interim evaluation only."

- "To judge the role ARDSA has or will play we must be patient and wait long enough for the range ecosystem to react."

- "It is almost impossible to separate incremental benefits related to ARDSA from ARDA, GRI and/or other range and livestock management efforts. To separate the whole is unrealistic."

4.11 SUMMARY OF PART TWO'S IMPACT AND CONTRIBUTION

ARDSA is in the process of introducing $14.5 million worth of improvements to more than 100 different Range Units in the province. It is projected that this will ultimately affect 608 ranchers. It was originally targetted that Part Two would implement 220 CRMP's. To date only 17 Part Two projects have been completed.

The ten projects we surveyed were generally successful in meeting certain objectives: resource conflicts have been reduced, the education of users has improved, any extra forage production is being utilized, and in the majority of cases, use considerations for wildlife, recreation and timber were well integrated. As a result, we believe that these ten projects have had some role in assisting to increase the B.C. cow herd against national trends. (For example, B.C.'s cattle numbers increased 5% in the period 1977-1980 while the Canadian total decreased 6% in the same period.) We also believe it is premature at this time to attempt to retrieve actual data related to forage productivity (i.e. AUM's).

These Part Two projects are making a contribution to the overall ARDSA objective of improving the viability of B.C.'s existing agricultural industry. In the ten sampled projects, the improvements of the range (forage) resources and their integrated use in the long run should contribute to an improved beef industry viability.

Part Two has made little if any contribution to ARDSA's "employment" objective. To date the ten Part Two projects we surveyed have had limited success in creating employment opportunities. It is our understanding that even at the outset, Part Two was never intended to be a big job creator. As a result, there was very little evidence in our survey and in the files that this overall ARDSA objective has been addressed or achieved to any measurable extent. We did find scattered opportunities for temporary jobs, such as range riders for grazing seasons. There were also a small number of production units at which owners had increased staff or farm family employment.

CHAPTER FIVE

EVALUATION OF PART THREE:
PRIMARY RESOURCE DEVELOPMENT

5.1 INTRODUCTION

Many farm lands or potential farm lands have soil moisture deficits or surpluses. But producers first need infrastructure outside the farm gate before they can install drainage, irrigation or flood control projects on the farm. To help resolve this issue, Part Three consists of irrigation, drainage and flood control projects whose stated objective is:

> To increase the production capability of the under-developed land resources within the framework of those primary products which show market and production potential.

To achieve this objective, Part Three has approved 32 projects at a total cost of $13.5 million. BCMAF and DREE each committed $5 million while the farmers themselves committed $3.5 million. As of December 31, 1981, approximately 396 farms will be affected by these approved Part Three projects. ARDSA files also indicate that 980 hectares of new land will be bought into production as a result of these projects and a further 4,770 hectares will have improved production capability. Appendix A lists the approved Part Three projects while Table 5.1 illustrates the spatial diversification of the projects.

5.2 WORKING OBJECTIVES

It was necessary to develop a more precise set of working objectives for Part Three. To do this, we observed that:

- It was clear that the immediate objective was to provide the necessary infrastructure outside the farm gate (i.e. off the farm) so that producers could install drainage and irrigation on their own under-developed farm land (i.e. on the farm).

TABLE 5.1

DIVERSIFICATION OF PART THREE PROJECTS BY REGIONAL DISTRICT

Regional District	Number of Approved Part Three Projects	% of Total Part Three Funds
Capital	1	1.5%
Cariboo	1	3.9
Cent. Fraser Valley	2	2.0
Central Kootenay	1	1.3
Central Okanagan	2	.5
Dewdney-Alouette	2	3.4
East Kootenay	1	3.7
Fraser-Cheam	2	14.1
Greater Vancouver	2	8.9
North Okanagan	2	6.3
Okanagan-Similkameen	3	17.3
Squamish-Lillooet	1	23.9
Thompson-Nicola	10	10.3
Not Applicable to a Specific Regional District	2	3.0
	32	100.0%

- These new irrigation and drainage projects on the farm would then increase the production capability by either improving land currently cultivated (but under-utilized) or by bringing new land into production.

- It was then intended that this increased capacity would be actually utilized in the production of those primary products which show market and production potential.

- This increased agricultural activity would then lead to more jobs on and off the farm and improved stability and viability, thus achieving the overall ARDSA objective.

Table 5.2 presents the resulting working objectives and associated performance indicators; Figure 5.1 summarizes the way in which Part Three was intended to achieve its objectives.

5.3 FIELD SURVEY

At the time of our evaluation, there were only nine Part Three projects which were complete in the sense that the necessary improvements had been introduced both on and off the farm and had started to function. (The relatively low number of applications in the first three years of ARDSA's existence is one reason why so few projects are now complete; this issue is addressed in greater detail in Chapter Eight.) We included seven of these projects in our sample.

The remainder of this Chapter describes the extent to which these seven sampled projects have achieved their own objectives and those of Part Three.

Since only a relatively few number of Part Three projects have been completed, any conclusions we reach about the observed impact of the sampled projects should not be applied to the total set of Part Three projects.

5.4 OBJECTIVE ONE : OFF-FARM INFRASTRUCTURE

This first working objective in Part Three is:

To introduce necessary irrigation, drainage and flood control infrastructure off the farm.

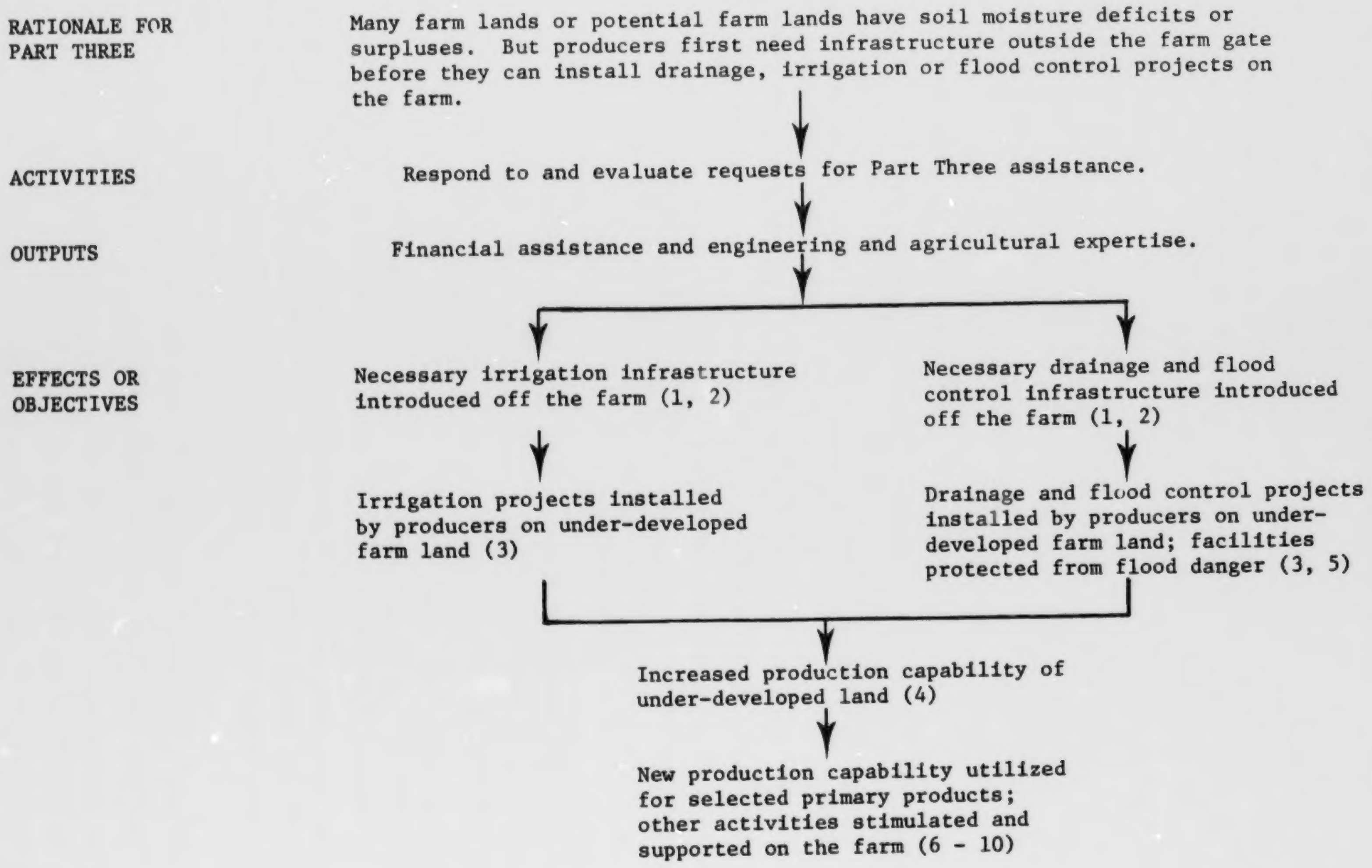
TABLE 5.2

EVALUATION FRAMEWORK FOR PART THREE

Working Objective	Associated Performance Indicators
1. To introduce necessary irrigation, drainage and flood control infrastructure off the farm.	1. Quantitative description of the new facilities (distinguish between irrigation, drainage and flood control) introduced off the farm.
	2. Number and size of farm units affected by the new infrastructure.
2. To utilize this new infrastructure by enabling producers to install irrigation and drainage on under-developed or under-utilized farm land.	3. Quantitative description of the new irrigation and drainage facilities installed by producers as a result of the new infrastructure off the farm.
3. To increase the capability of the under-developed or under-utilized land for the production of those primary products which show market and production potential.	4. Amount of improved land irrigated, drained or under flood control and thus more productive as a result of new drainage and irrigation facilities on the farm.
	5. Type of facilities protected from flood dangers.
4. To actually utilize the increased production capability for the selected primary products.	6. Amount of the new production capability that has actually been utilized for the production of those primary products which show market and production potential.
5. To stimulate and support agricultural activity on the affected farms.	7. Increased production on the newly-developed land of those primary products which show market and production potential.
	8. Amount of investment by the private sector on associated projects.
	9. Description of other impacts "on-farm" as a result of projects (eg: improved crop production practices, better farm management, etc.).
	10. Type and usefulness of the role of the program in providing engineering design services and advice.

FIGURE 5.1

INTENDED CAUSAL RELATIONSHIP FOR PART THREE



RATIONALE FOR PART THREE

Many farm lands or potential farm lands have soil moisture deficits or surpluses. But producers first need infrastructure outside the farm gate before they can install drainage, irrigation or flood control projects on the farm.

ACTIVITIES

Respond to and evaluate requests for Part Three assistance.

OUTPUTS

Financial assistance and engineering and agricultural expertise.

EFFECTS OR OBJECTIVES

Necessary irrigation infrastructure introduced off the farm (1, 2)

Irrigation projects installed by producers on under-developed farm land (3)

Necessary drainage and flood control infrastructure introduced off the farm (1, 2)

Drainage and flood control projects installed by producers on under-developed farm land; facilities protected from flood danger (3, 5)

Increased production capability of under-developed land (4)

New production capability utilized for selected primary products; other activities stimulated and supported on the farm (6 - 10)

This objective was met in the seven sampled projects. The off-farm improvements were considered necessary and essential if any on-farm changes were to occur. Table 5.3 summarizes the improvements.

The drainage projects involved provision for some flood protection in addition to water table control but no dyking works were involved.

The Kent-Hammersley drainage project may experience some problems with ditch wall stability but all other sampled projects seem to be soundly in place. In all cases, for the works specified, the money appears to have been utilized efficiently. (Chapter Eight addresses the issue as to whether these specifications were appropriate.)

5.5 OBJECTIVE TWO : ON-FARM WORKS

The second working objective is:

> To utilize the new off-farm infrastructure by enabling producers to install irrigation and drainage on under-developed or under-utilized farm land.

This objective was being met as most of the farmers had introduced or were in the process of introducing some form of on-farm improvements.

The amount of such on-farm improvements varied in our sampled drainage projects.

- Two projects required and resulted in little on-farm improvements. The Oliver #18 project is basically an interceptor perforated underdrain and if it performs satisfactorily, little or no branch underdrains would be required. In the Kent-Hammersley area, the sub-soils may be quite coarse in which case much of the area may be improved to a fair degree by off-farm works alone. In any event, on-farm improvements are slow in coming and first priority seems to be directed to surface drainage works as opposed to sub-surface works.

- Significant on-farm underdrainage improvements have been made on the Upper Deep Creek project. The new works were introduced almost immediately after the completion of the off-farm outlet, due to the fact that increased productivity was necessary for the intensive dairy operation being developed.

TABLE 5.3

SUMMARY OF OBSERVED OFF-FARM WORKS AND ON-FARM IMPACTS

Project	Type of Works Introduced	Size of Farm Units Affected	Number of Farms Affected	Amount of Improved Farm Land
Irrigation:				
Farleigh Lake #1 & #2	Buried 4" gravity line making domestic water available to nine properties (not all with hook up)	4.2 hectares	1	4.2 hectares
Basque Vineyards	7 pumps (105 Hp pump capacity), 8" main	41.7 hectares	4 (one additional farm hook up in the future)	41.7 hectares
St. Mary's	2 pumps (600 Hp pump capacity); 14" through 8" mainline	208.3 hectares	6	208.3 hectares
Drainage:				
Oliver #18	An interceptor under-drain	20.8 hectares	10 (some domestic water is tapped off the drain line)	20.3 hectares
Deep Creek	A single collector open ditch	83.3 hectares	3	83.3 hectares
Kent-Hammersley	Three ditches and five branches	416.7 hectares	Still being determined	Approximately 83.3 hectares

The situation with the irrigation projects is a little more clear cut since the farmers have to pay their share of costs annually whether or not htye use their share of water. For example:

- The projects at Farleigh Lake and Basque Vineyards each involved really one farm or one family group of farms and as the key promoter of the project is one in the same, the operations were ready with on-farm improvements.
- St. Mary's irrigation project was the largest and most expensive of those we examined. The participating farmers are serious and are irrigating. In fact, these farmers have more land than they have water for; therefore they should be able to fully utilize the system in all years, including an exceptionally wet year (they will simply shift to pick up some additional acreage in that year).

5.6 OBJECTIVE THREE : INCREASED PRODUCTION CAPABILITY

This objective is:

> To increase the capability of the under-developed land for the production of those primary products which show market and production potential.

This objective was met to a significant extent in the sampled projects. All lands to which on-farm water management works were applied increased production capability. Table 5.3 identified the number of improved hectares for each project.

The Kent-Hammersly drainage project has apparently gained some degree of improvement over a larger area as a result of the off-farm works alone.

With respect to the associated flood alleviation aspect of the drainage projects, there were no facilities situated in such danger areas. Only the crops are affected since the buildings, etc. are located on higher ground in built up areas. At least one farm in Kent-Hammersley used some of the excavated soil to add to the built up area surrounding the buildings.

5.7 OBJECTIVE FOUR : USE OF INCREASED CAPABILITY

Once the land is improved, the next working objective is:

> To actually utilize the increased production capability for the selected primary products (i.e. those which demonstrate market and production potential).

Some progress is being made in achieving this objective. All lands for which on-farm water management works were applied have been immediately put to some crop use, but not always the long term intended use. For example, at Basque Vineyards, some of the irrigated land is in alfalfa for an interim period while grapes and tree fruits come on stream. The farmers here are cautiously building their market for vegetables as they develop their irrigated crop.

In some cases there is concern and an awareness about possible shortages of markets if a particular crop is brought on in too large a quantity too soon. For example, the farmers at St. Mary's Prairie were very concerned that this year they might not be able to successfully market the hay destined for off-farm sales.

5.8 OBJECTIVE FIVE : STIMULATION OF AGRICULTURAL ACTIVITY

This working objective is:

> To stimulate and support agricultural activity on the affected farms.

Agricultural activity appears to have been encouraged in the sampled projects in a number of areas. For example, as mentioned previously, increased production has taken place on the improved acreage. The Basque irrigation project will create the largest increase in production since in the past, the area suffered from little water, low elevation and high heat units. At Farleigh Lake and St. Mary's, the elevation is higher and especially at St. Mary's a dryland crop is possible in most years. The forage crop yield under irrigation is estimated to be about five tons per acre, whereas without irrigation, the yield would only be one to one and a half tons per acre.

With respect to the drainage projects, any area previously subjected to inundation by water for weeks at a time would not support normal forage crops where now it will. Crops in the order of four to five tons per acre are now possible. In addition, the high water table was harming the existing trees at Oliver #18 and the improved interceptor should allow trees to be re-established.

The farmers will have invested $3.5 million for all 32 approved projects for off-farm improvements. On the farms, the private sector has made varying degrees of investments, depending on the intensification of the on-farm system chosen. For example, only a small acreage is involved at Farleigh Lake and the least expensive system was used (hand move irrigation). At St. Mary's, investments were made in a variety of equipment, including hand move, wheel move and pivot systems. Basque invested in a solid set system, the most expensive.

ARDSA-funded drainage projects on the other hand resulted in less subsequent investment. The areas requiring only surface drainage required the least investment as compared to surface drainage plus underdrainage. One improved farm at Deep Creek invested at least $25,000 in drainage improvements. We found that the investments for on-farm improvements varied between $200 and $800 per acre.

There were several other benefits to the farm units as a result of the projects:

- Because of better drainage, it was possible to get equipment onto the land earlier in the spring.
- By getting better yields per acre, the farmer decreases his unit production costs.
- Several farmers indicated that with improved drainage, less distance had to be travelled during cultural practices.
- One interesting impact was at Oliver #18. We were told that ARDSA involvement may have prevented a rift among neighbours since a downstream farmer was threatening to block the existing drainage outlet to the upstream neighbour.
- Several farmers indicated that they benefited from the advice and education they received through ARDSA on the engineering and agrology aspects of improving the farm unit.

5.9 INCREMENTAL ROLE OF PART THREE

In general, the sampled Part Three projects helped to bring together a group of farmers when it is necessary to run an off-farm improvement through more than one farm. The process forces co-operation and Part Three assistance got the groups in our survey a solution to their problems.

In nearly all cases we surveyed, the farmers would likely have eventually proceeded on their own, but at a much slower speed. Part Three has therefore been successful in bringing forward the investment in the surveyed projects.

It is difficult to separate the impact and role of ARDSA from that of other agencies and assistance programs. For example, in the Basque Vineyards project, there was involvement not only with ARDSA, but also with the Land Commission (which granted the subdivision of the original farm into four farms), the Highways Department (which gazetted the local access road) and B.C. Hydro (which provided a grant toward hydro service).

5.10 SUMMARY OF PART THREE'S IMPACT AND CONTRIBUTION

Based on the 32 approved projects, Part Three's intended impact is to introduce $13.5 million worth of off-farm improvements so that approximately 390 farms will be able to introduce irrigation and drainage projects to 15,092 hectares of farmland. ARDSA anticipates that 980 new hectares will eventually be bought into production and an additional 4,770 hectares will eventually be improved so that production can be increased. Since only nine projects can be considered complete to the extent that all the on-farm works have been introduced, most of these intended results have likely not yet occurred.

Based on our survey of observed impacts, we conclude that the seven sampled projects have achieved most of their intended results. That is, they reached their objective of establishing irrigation and drainage works off the farm, thus enabling the introduction of the needed new works on the farm. Production capability has been increased to the targetted levels and is being utilized, although not necessarily for those products with the greatest market and production potential. The viability of the farm units has thus been strengthened.

There was little evidence that ARDSA's overall employment objective has yet been met in the Part Three projects we examined. In most cases, including the large St. Mary's project, the construction of the off-farm and on-farm improvements was undertaken by the farmers themselves. Specialized skills such as electrical and welding were sub-contracted out.

With respect to potential new employment opportunities connected with expanded farm operation, the improvements basically enabled the farmer himself (and existing staff) to be more efficient. In general, there is a slight increase in work which first goes to existing staff and family before new positions are considered. The only real employment impact we observed was in Deep Creek, in which a seasonal job was upgraded to a full year job.

CHAPTER SIX

EVALUATION OF PART FOUR:
SUPPORT SERVICES AND COMMUNITY DEVELOPMENT

6.1 INTRODUCTION

The 1977 Agreement indicates that in many rural areas and in several agricultural sectors, the infrastructure and facilities necessary for stability and increased agricultural activity are either non-existent, not easily accessible or are obsolete. To resolve this problem, the Agreement states that Part Four's objective is:

> To provide the support services needed in rural areas to develop the agricultural industry to secondary processing and value added stages, thereby improving stability and rural employment opportunities.

To achieve this objective, Part Four has approved 142 projects whose total costs are $66.0 million. BCMAF and DREE have each committed $7.9 million while the private sector has committed $50.1 million. Table 6.1 indicates the spatial diversification of the Part Four projects while Table 6.2 indicates the different industrial sectors (i.e. SIC codes) which have received Part Four assistance. Appendix A lists the 142 projects.

Other sections of this Chapter describe in greater detail the many diverse projects. Typical of the intended impacts of Part Four are:

- Development of several facilities to provide boxed beef to supermarkets and to small stores.
- Expansion of services offered to farmers, including veterinary clinics and livestock facilities.
- Creation of new product lines, such as seaweed specialties, fruit leathers, cottage wineries, jams and honey production, enzyme production and new product lines for the flour market.
- Replacement of imported products such as juices, blueberries and health foods.

TABLE 6.1

DIVERSIFICATION OF PART FOUR PROJECTS BY REGIONAL DISTRICT

Regional District	Number of Approved Part Four Projects	% of Total Part Four Funds
Alberni-Clayoquot	1	2.7%
Bulkley-Nechako	5	1.1
Capital	2	4.6
Cariboo	15	4.8
Cent. Fraser Valley	15	23.7
Central Kootenay	2	.7
Central Okanagan	7	9.4
Columbia Shuswap	1	.1
Comox-Strathcona	2	1.0
Cowichan Valley	1	-
Dewdney-Alouette	5	1.7
East Kootenay	3	.9
Fraser-Cheam	4	5.9
Fraser-Fort George	2	.4
Greater Vancouver	12	12.5
Kitimat-Stikine	1	.1
Mount Waddington	1	.2
Nanaimo	2	1.7
North Okanagan	7	6.0
Okanagan-Similkameen	14	11.3
Peace River-Liard	16	3.9
Skeena-Queen Charl.	1	2.0
Squamish-Lillooet	1	.2
Sunshine Coast	1	.2
Thompson-Nicola	14	3.2
Not Applicable to a Specific Regional District	2	2.0
	142	100.0%

TABLE 6.2

SECTORAL DIVERSIFICATION OF PART FOUR PROJECTS

Sector	Number of Approved Part Four Projects	% of Total Part Four Funds
Logging	1	.2%
Highway, Bridge and Street Construction	1	.2
Dairy Products Industry	1	.3
Forestry Services	2	.8
Beverage Industries	3	2.0
Grain Elevators	1	2.0
Bakery Products Industries	1	2.0
Flour and Breakfast Cereal Products Industries	1	3.0
Feed Industry	6	4.2
Fish Products Industry	10	10.0
Electric Power	46	10.7
Meat and Poultry Products Industries	14	12.0
Water Systems	4	15.9
Fruit and Vegetable Processing Industries	28	30.8
Services Incidental to Agriculture	17	4.7
Public Information	1	1.7
	142	100.0%

- Production of foods for the export market including enzymes, jams and honey, fish products, grain and grain by-products, and juices (apple and raspberry specifically).

Part Four also includes funds for a "public information" project which was to support the public information and advertising requirements of all four ARDSA parts. We included this project in our survey and it is discussed separately in Chapter Eight.

6.2 WORKING OBJECTIVES

To develop a more concise and measurable set of working objectives, we considered the following points:

- The explicit program initiatives stated in the Agreement give further details as to what this Part was intended to do; it was necessary to reflect them in the working objectives.

- It was clear that a short run objective was to address those "impediments" which hinder stability and increases in agricultural activity. These impediments ranged from a lack of veterinary clinics to obsolete equipment in fruit processing plants.

- The objective for those firms considering investment was to actually achieve or "induce" the desired establishment, modernization or expansion, not merely "encourage" it.

- Once some of the impediments had been removed, it was expected that other benefits would occur, thus eventually leading to the overall ARDSA objectives. For example, it was anticipated that a modernized processing plant would increase production, hopefully employ more labour, become more competitive, etc.

Table 6.3 presents the Part Four working objectives and performance indicators we established based on the above points. Figure 6.1 summarizes the way in which Part Four was intended to achieve its objectives and those of ARDSA in general.

TABLE 6.3

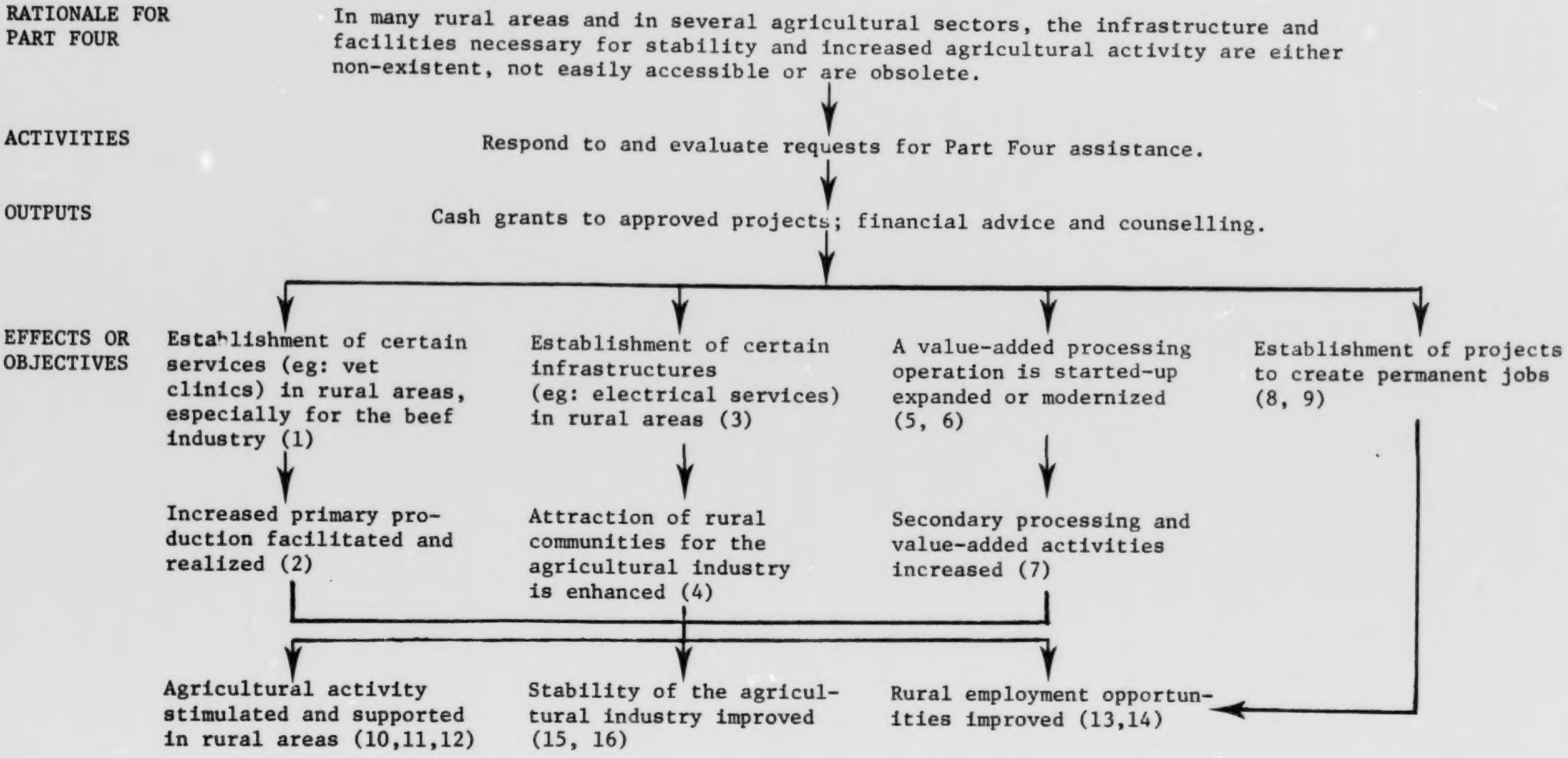
EVALUATION FRAMEWORK FOR PART FOUR

Working Objective	Associated Performance Indicators
1. To establish those services which are required in rural regions to encourage primary production, especially in the beef industry.	1. Quantitative and qualitative description of the type and extent of new services provided; some assessment of the extent to which they are utilized.
2. To increase primary production, especially in the beef industry.	2. Amount of increased primary production arising from new services.
3. To introduce those infrastructures which are required to enhance the attraction of rural communities for the agricultural industry.	3. Quantitative and qualitative description of the type and extent of new infrastructures provided.
	4. Assessment of the degree to which the "attraction" has increased.
4. To induce firms to start-up, expand or modernize those facilities and services which support secondary processing and additional value-added stages.	5. Quantitative and qualitative description of the start-ups, expansions and modernizations that have taken place.
	6. Number and type of firms which have started-up, expanded or modernized.
5. To increase secondary processing and value-added activities.	7. Increased amount of value-added processing (measured in units and dollars if possible) arising from new or expanded facilities.
6. To establish permanent job creation projects in rural regions.	8. Number and type of such projects.
	9. Number, type and duration of jobs created via these projects.
7. To stimulate and support agricultural activity in rural areas.	10. Amount of investment by assisted firms and communities to complement the ARDSA assistance.

Working Objective	Associated Performance Indicators
	11. Number of new entrepreneurs.
	12. Role and usefulness of financial advice.
8. To improve rural employment opportunities.	13. Number, type and duration of permanent and temporary jobs accommodated by ARDSA assistance. This would include jobs created and jobs "saved".
	14. Degree of negative substitution of capital for labour at assisted firms.
9. To improve the viability and stability of B.C.'s agricultural industry.	15. Assessment of increased productivity, competitiveness, stability, profitability, etc. of firms and areas affected by ARDSA.
	16. Percentage of assisted firms that are still in business; compare to national and provincial averages.

FIGURE 6.1

INTENDED CAUSAL RELATIONSHIP FOR PART FOUR



RATIONALE FOR PART FOUR

In many rural areas and in several agricultural sectors, the infrastructure and facilities necessary for stability and increased agricultural activity are either non-existent, not easily accessible or are obsolete.

ACTIVITIES

Respond to and evaluate requests for Part Four assistance.

OUTPUTS

Cash grants to approved projects; financial advice and counselling.

EFFECTS OR OBJECTIVES

Establishment of certain services (eg: vet clinics) in rural areas, especially for the beef industry (1)

Increased primary production facilitated and realized (2)

Establishment of certain infrastructures (eg: electrical services) in rural areas (3)

Attraction of rural communities for the agricultural industry is enhanced (4)

A value-added processing operation is started-up expanded or modernized (5, 6)

Secondary processing and value-added activities increased (7)

Establishment of projects to create permanent jobs (8, 9)

Agricultural activity stimulated and supported in rural areas (10,11,12)

Stability of the agricultural industry improved (15, 16)

Rural employment opportunities improved (13,14)

6.3 FIELD SURVEY

We conducted a field survey of 18 sampled projects. The remainder of this Chapter focuses on the extent to which these 18 projects met their own objectives and those of Part Four. In certain cases we were able to utilize Data Sheet information in drawing conclusions about Part Four's intended and observed impacts.

6.4 OBJECTIVES ONE AND TWO : SERVICES TO PRIMARY PRODUCERS

The first two working objectives in Part Four are concerned with providing services to primary producers:

> To establish those services which are required in rural regions to encourage primary production, especially in the beef industry.
>
> To increase primary production, especially in the beef industry.

There were 20 projects which pursued these objectives. They include:

- The establishment, expansion or modernization of five veterinary clinics in various areas of the province to provide increased services to primary producers and to ensure that a greater area of the province has accessible veterinary services.
- The upgrading of five livestocking handling facilities and three feedlots to aid the downstream services to the beef industry.
- Other new services supported by Part Four include two laboratories, two drainage service projects and a liquid manure service.

Hard statistical evidence of herd improvements and increased production is not available in the Data Sheets for these 20 projects due to the brevity of time elapsed from their completion. However, agricultural officials indicate that herds are now generally larger in those areas served by the newly-established services.

In the case of the Merryfield Cattle Company of Cache Creek, which was a project to build a custom beef-calf backgrounding feedlot, there has been an increase in capacity of a minimum of 1,000 head per year. This new capacity has been utilized and has enabled cattle raising to be expanded in this area, as well as provide a market for the area's hay production.

6.5 OBJECTIVE THREE : RURAL INFRASTRUCTURE

This objective is:

> To introduce those infrastructures which are required to enhance the attraction of rural communities for the agricultural industry.

There are 48 Part Four projects which pursue this objective, 46 of which are concerned with the provision of improved electrification services to rural areas. These projects are intended to ultimately provide improved services to 936 users and 448 farm units.

We surveyed four projects: the Sumas Prairie Water Supply project and three electrification projects at Big Creek, Milligan Creek and South Buick. The Sumas Prairie Water Supply project is intended to provide a stable and more equitable supply of potable water for 600 houses and 200 farms in the Sumas area, covering 9,167 hectares of farm land. The projected benefits will likely be felt most strongly in the dairy farm area with a potential for increased herds and milk products.

We observed several important impacts in the three electrification projects:

- Stability: All three projects have provided (or will likely provide) a greater degree of stability in rural areas which previously had no electrification. The increased stability arises from the greater reliability of hydro power versus generators. A frequent comment was "Diesel generators provide only enough power to service half of my electrical needs".

- Productivity: Early indications are there have been some productivity increases enjoyed by these farms. For example, farmers in the Big Creek area expect an additional 100-120 more calves per year as a direct result of the electrification provided by Part Four.

- New Farm Units: There are indications that new farm units are being started up in the areas where electrification has taken place. For example, six new farm units are being established in the Milligan Creek area.

- Cost and Revenue Impact: The results of our sample show that the advent of electricity in these remote parts of the province provides cost-savings and potential increased revenues from agriculture as a result of electrification. If the cost-savings derived from switching from a home generator to B.C. Hydro, and extra-farm revenues (from reduced cattle losses and increased grain production) calculated for the projects are realized, the benefits accruing to the farmers in the first year alone will almost match the outlays made under the ARDSA program. It is however, too early to tell whether such is the case, as results are not yet available.

6.6 OBJECTIVES FOUR AND FIVE : SECONDARY PROCESSING AND VALUE ADDED ACTIVITIES

Part Four had two major working objectives related to secondary processing:

> To induce firms to start-up, expand or modernize those facilities and services which support secondary processing and additional value-added stages.
>
> To increase secondary processing and value-added activities.

ARDSA induced 69 firms to start-up, expand or modernize. The total costs for these projects was $48.5 million, of which ARDSA contributed $9.8 million. The projects undertaken include the establishment of new companies, expansions of existing operations, and modernizations of plants to increase productivity, and in some instances, to save jobs.

The agricultural industry sector which received the most support from ARDSA in pursuing this objective was the handling of fruits (11 projects), followed closely by seafood processors and abbattoirs (meat plants, specifically beef) with eight projects each. Other projects supported include vegetable and fruit processing (6), vegetable handling plants (4), poultry projects (4), cottage wineries (4), and juice plants (4). The remaining 15 projects were scattered over a wide range of other sectors of the agricultural industry.

Several interesting projects have been started up under this program. They include a producer of seaweed products, both for domestic and export consumption, and the producing of fruit leathers, a product derived from fruit purees.

We surveyed 11 projects. Four represented new companies or new operations, three were modernizations, three were expansions of existing operations, and one was a combined expansion and modernization. These sampled projects were all successful in achieving and sometimes surpassing their intended results. They resulted in new start-ups, expansions, modernizations and increasing value-added activities in the agricultural industry, especially at the secondary stage. For example:

- The projected sales increase at J&L Meats Co. Ltd. was 250%. We observed a 700% increase.

- The Vernon Tree Fruit Union was able to process 84,000 bins of fruit per year in a more efficient manner.

- Okanagan Dried Fruits Ltd. had projected it would produce 25 cases per day of "fruit leathers" and is currently producing 30 cases per day.

- With Part Four support, it was intended that the Fraser Valley Mushroom Growers would handle 14 million pounds per year. They are currently handling 20 million pounds per year.

- The B.C. Coast Vegetable Co-op Association projected that with Part Four funding it would handle 90,000 tons in 1981. Because of poor weather conditions that year, it handled 52,000 tons.

When reviewing the projected versus actual results of these projects, it is important to note that the volume, sales and "value-added" of processing industries dealing with fruits and vegetables are dependent on crop size which in turn is dictated by the climatic and soil conditions for that particular year. Thus, as an example, a project which sorts and grades apples may handle 90,000 bins of apples one year and 70,000 bins the next, due to a change in climatic conditions producing poorer crops.

The Vernon Tree Fruit Union is one such sampled project in which the above issue is important. In their case, the modernization of their sorting line so that apples can be pre-graded and pre-sized, enables them to be more competitive and more responsive to market demand. It also has helped to increase productivity. In poorer crop years this would lead to lower levels of employment. However, in a boom-crop year, they would be able to handle virtually all of the product that could be produced by the members of this particular growers union. This in turn leads to a greater return of profits to the growers and provides opportunities for increased employment.

Two other sampled projects illustrate the benefits derived from increased secondary processing. These projects are Fraser Valley Mushroom and East Chilliwack Agricultural Co-op. At Fraser Valley Mushroom, they were only serving the demand for fresh mushrooms. Their ARDSA project helped establish a canning plant which allowed them to compete in the canned mushroom market. This not only supported local growers, it also helped reduce cyclical swings in Fraser Valley's operations. It also provided an increased return to both the grower and to Fraser Valley Mushroom.

The same situation occurred at East Chilliwack Agricultural Co-op. In this instance they established an instant quick freeze (IQF) and fresh and bulk-pack raspberry plant to better handle the raspberries produced by their grower members. This new facility also enabled them to process other crops such as strawberries, blueberries and cole crops for the IQF market. In addition, a juice and concentrate plant was also built as a part of the project. This is very important as the juice plant uses raspberries which might otherwise not be sold as first grade or IQF raspberries and thus be wasted. It also means the plant can be kept going year round by freezing the lower quality fruit for juice processing later on in the year. Benefits which this has brought to the growers in the area include increased employment and more acreage brought into production. It also enabled them to introduce mechanized picking of raspberries, a crop which is normally difficult to pick on a mechanized basis.

Two other projects, one at Sunrype and a second at Sun Dew were also concerned with increased juice capacity to utilize cull fruits which might otherwise not be used, or sold in the market place. These projects increased the plants' viability and gave the growers a higher return on their product.

6.7 OBJECTIVE SIX : PERMANENT JOB CREATION PROJECTS

Another Part Four working objective is:

To establish permanent job creation projects in rural regions

Under this Part of ARDSA, four projects were approved, one in the Okanagan, a second in the Lower Mainland, and two in the Kootenays. Eighty permanent jobs were to have been created. For these four projects, the Data Sheets indicate that as of December 31, 1981, approximately 106 person years of temporary employment were created; only three permanent jobs were created.

The results therefore appear to be at divergence with the working objective. It would appear that the original intent of the program has either not been met or that the objective has evolved in such a way over time so as to not resemble the original intent.

6.8 OBJECTIVE SEVEN : AGRICULTURAL ACTIVITY

An important over-riding working objective for all Part Four projects was:

To stimulate and support agricultural activity in rural areas.

The Data Sheets and our survey results indicate that Part Four projects have made significant progress in achieving this objective. For example:

- Investment: The total investment for Part Four projects was $66.0 million. ARDSA contributed $15.8 million (25%) while the assisted firms and communities contributed $50.1 million.

- New Entrepreneurs: There were 28 new entrepreneurs established to provide services to primary producers. Forty-three new entrepreneurs were encouraged to enter secondary processing and value-added activities, for a total of 71 new entrepreneurs in the agricultural industry, as indicated by the Data Sheets.

- Financial and Management Advice: Many assisted firms received advice from government officials and consultants. The most extensive use of advice was made by those firms or projects considering secondary processing and value-added activities. Approximately 50% of these approved projects received "extensive" government and/or consultant advice. A further 25% of the projects in this category received a "moderate" level of such support. Of the 20 projects which were providing improved services to primary producers, 17 received moderate or extensive advice from government or government-sponsored consultants. Results were inconclusive as to the usefulness of this advice.

- Other Impacts: The increased level of economic activity fostered by the Part Four projects appears to have stimulated increased acreage in production, and a greater use of the lower grades of product, which might otherwise not be used. It has also helped the assisted B.C. companies gain a greater share of the market for second stage processed agricultural products.

6.9 OBJECTIVE EIGHT : EMPLOYMENT

After our survey, we compared the actual number of full time equivalent jobs created with any projections that were made for the sampled projects in the Data Sheets. The two numbers were similar and this gave us some degree of confidence in the Data Sheet projections as to the total number of jobs created (or likely to be created) in Part Four projects. This includes:

- Approximately 60 jobs arising from the projects dealing with services to primary production.

- Approximately 400 new jobs and 300 saved jobs as a result of projects associated with secondary processing and value-added activities.

There was a lack of information on the number of jobs created by rural infrastructure projects. Although our survey did not identify any specific new jobs arising from such projects, it must be recognized that new farms will likely be starting up and creating new employment opportunities in the newly electrified areas. For example, six new farms are expected to start up in the Milligan Creek area as a result of the electrification project.

With one or two exceptions, there was very little if any, negative substitution of capital for labour in the sampled projects, despite the modernization carried out by several of the projects. The intent of these modernizations was more to increase productivity, establish a greater market share, and make them more competitive in the market place, rather than to substitute capital for jobs. A case in point is the Vernon Tree Fruit Union project. Here, new equipment installed for pre-grading and pre-sizing allowed them to pre-sort and store apples prior to waxing and packaging. When orders came in, they could react more quickly to meet the exact demands of the market. This speed of response is also aided by new waxing and packaging equipment.

The increased capital investment has helped save jobs, if not create more, by providing year-round employment. For example, the Sunrype plant in Kelowna has expanded its juice making capacity in that a product can now be manufactured from stored fruits during the time of year when fresh product is not available for market.

6.10 OBJECTIVE NINE : INCREASED VIABILITY AND STABILITY

The 18 surveyed projects have had (or will have) a positive impact on the viability and stability of B.C.'s agricultural industry. Using appropriate performance indicators, Table 6.4 describes how the viability of six representative firms was strengthened by Part Four. For example the electrification projects make it easier for the farm units that were provided with electricity to take better care of their herds and prevent loss of calves during the winter season. It also helps in some instances with irrigation to provide better crops which are sold or used for feed on site.

A second overall example is the establishment of juice making plants which enable lower grade fruits to be used instead of being tossed away. This has a two-fold effect. The first is to keep the plant operating by storing the lower

TABLE 6.4

EXAMPLES OF IMPROVED VIABILITY ARISING FROM PART FOUR PROJECTS

Project Name	Project Description	Increased Production	Markets	Productivity	Competitiveness	Other Impacts on Viability
1. Western Protein Food Co-op	New de-boning plant	130,000 pounds per week (the projected figure was 50,000)	New secondary processing; new export markets in Japan and South Africa	Output per employee higher than expected	New products on the market	Considering second expansion; helps chicken growers
2. Fraser Valley Mushroom Growers Co-op	New canning plant	20 million pounds per year (the projected figure was 14 million)	Replaces imports; provides canned mushrooms	Five fold increase in productivity per employee	Purchased the "Money's" brand name	Supports growers who can produce more; reduces cyclical swings
3. East Chilliwack Agricultural Co-op	New plant for fruits, juices and cole crops	The forecast for 1982 is 8 million pounds	New export markets for IQF blueberries, strawberries and juices	Can now use plant for cole crops in off season	Purchased a new brand	Provides stability for farmers; more grades can be sold; more acreage can be in production
4. S. Spetifore & Sons	Convert existing plant into IQF fish processing	New production	Replaces imports from U.S.	Can now service fishermen in off hours	Quicker turnaround; Canadian products more competitive	Improved quality; benefited 50-100 fishermen
5. B.C. Coast Vegetable Co.	Expand processing plant; new equipment	52,000 tons in 1981 (the projected figure was 90,000 tons; it was a poor crop year)	Entered into Japanese market and some Alberta markets	Reduced overtime; increased capacity in peak periods	Kept prices competitive	Improved product quality; slowed price increases
6. Okanagan Dried Fruits	Equipment to produce fruit leathers	30 cases per day (the projected figure was 25)	Could enter U.S. market	New plant	New product to compete with imports	Cull fruits can now be used

grade fruit and producing juices year round, thus providing more stable levels of employment throughout the year. Secondly, such plants provide an outlet for the growers' poorer crops.

The industry's viability has also been increased by improved productivity. The greatest gains in productivity have arisen from the modernization of machinery, especially in facilities such as packing houses. Modern machinery allows the packing house to pre-grade and pre-size the fruit as well as making it easier to package the product. In addition, it enables them to react more quickly to market demand having had the product pre-graded and pre-sized.

Profitability is more difficult to measure because market and climatic conditions can determine the size of the crop and the price paid for the produce, thereby greatly affecting the profitability of the produce lines sold. However, the growers with improved facilities can benefit to a certain extent through the use of their cull and lower grade fruits in other processes. Therefore, a poor crop year would not hit profits as badly as it would have previously.

The Data Sheets indicate that only three of the 87 firms supported under Part Four are no longer in business. Based on our experience, this is a smaller percentage of firms going out of business than the national and B.C. averages.

6.11 INCREMENTAL ROLE OF PART FOUR

In examining the incremental role of Part Four in generating the impacts and results described in this Chapter, our survey of the 18 sampled projects indicated that:

- Those projects which provide services to primary producers would likely not have proceeded without Part Four funding.

- The electrification projects would not have proceeded unless ARDSA had assisted.

- Many of the secondary processing projects would have eventually proceeded without ARDSA assistance. Part Four however did play a major role in bringing forward the investment decision to either expand, modernize, provide new services, or start up a new company. It also enabled the firms to purchase equipment that was more modern and with greater capacity. Without the modernization assistance provided by several projects, several agricultural businesses would have had an increasingly difficult time competing in the fresh and frozen produce markets.

6.12 SUMMARY OF PART FOUR'S IMPACT AND CONTRIBUTION

Part Four has resulted in an overall investment of $66.0 million in B.C.'s agricultural sector. ARDSA has committed $15.8 million. The fruit and vegetable processing industry received 31% of this support.

Twenty projects have introduced or are introducing a variety of agricultural services (vet clinics, feedlots, etc.) in rural areas while it is intended that 46 electrification projects and two other infrastructure projects will eventually have an impact on 936 users and 448 farm units.

The major portion of Part Four funding (63%) has been related to secondary processing. Sixty-nine projects received assistance to pursue a wide range of expansion and modernization objectives.

The projects we surveyed have been successful in meeting their own specific objectives and those of Part Four. We observed new services to primary producers (most of which were being utilized), electrification projects which have enhanced the ability of current and new farmers to operate more economically and effectively in rural areas, and a variety of firms who have modernized, expanded or established new operations. New products have been developed, new markets are now being served, imports are being replaced, and the industry in general has been stabilized and made more viable by the projects we surveyed.

Based on our field work, this was also the only Part of ARDSA which has yet created measurable numbers of new jobs. Based on our sample, we have some confidence in the Part Four file projections that approximately 460 full-time equivalent jobs will have been created and 300 jobs saved overall.

CHAPTER SEVEN

EVALUATION OF ARDSA OVERALL

7.1 INTRODUCTION

The previous Chapters have examined the intended and actual impact of the individual ARDSA Parts. It is now important to assess the performance of the total ARDSA program.

The Agreement's major theme is that there are opportunities to develop B.C.'s agriculture sector in rural areas and/or to remove constraints to such development. As a result, ARDSA's stated objectives are:

- To identify, research, plan and pursue new or unexploited projects related to the development opportunity.
- To improve the viability of the existing industries to sustain growth.
- To expand employment in those existing aspects of the agriculture industry and food processing industry in British Columbia which demonstrate production and market potentials.

In developing a set of working objectives for ARDSA, we considered that:

- The intent was to not only expand employment, but to save existing jobs.
- The purpose was to improve the viability of the existing industries by developing and supporting the agricultural sector and food processing industry in rural regions.

With these points in mind, Table 7.1 lists the working objectives and associated performance indicators. Figure 7.1 summarizes the way in which ARDSA was intended to achieve its overall objectives.

TABLE 7.1

OVERALL EVALUATION FRAMEWORK FOR ARDSA

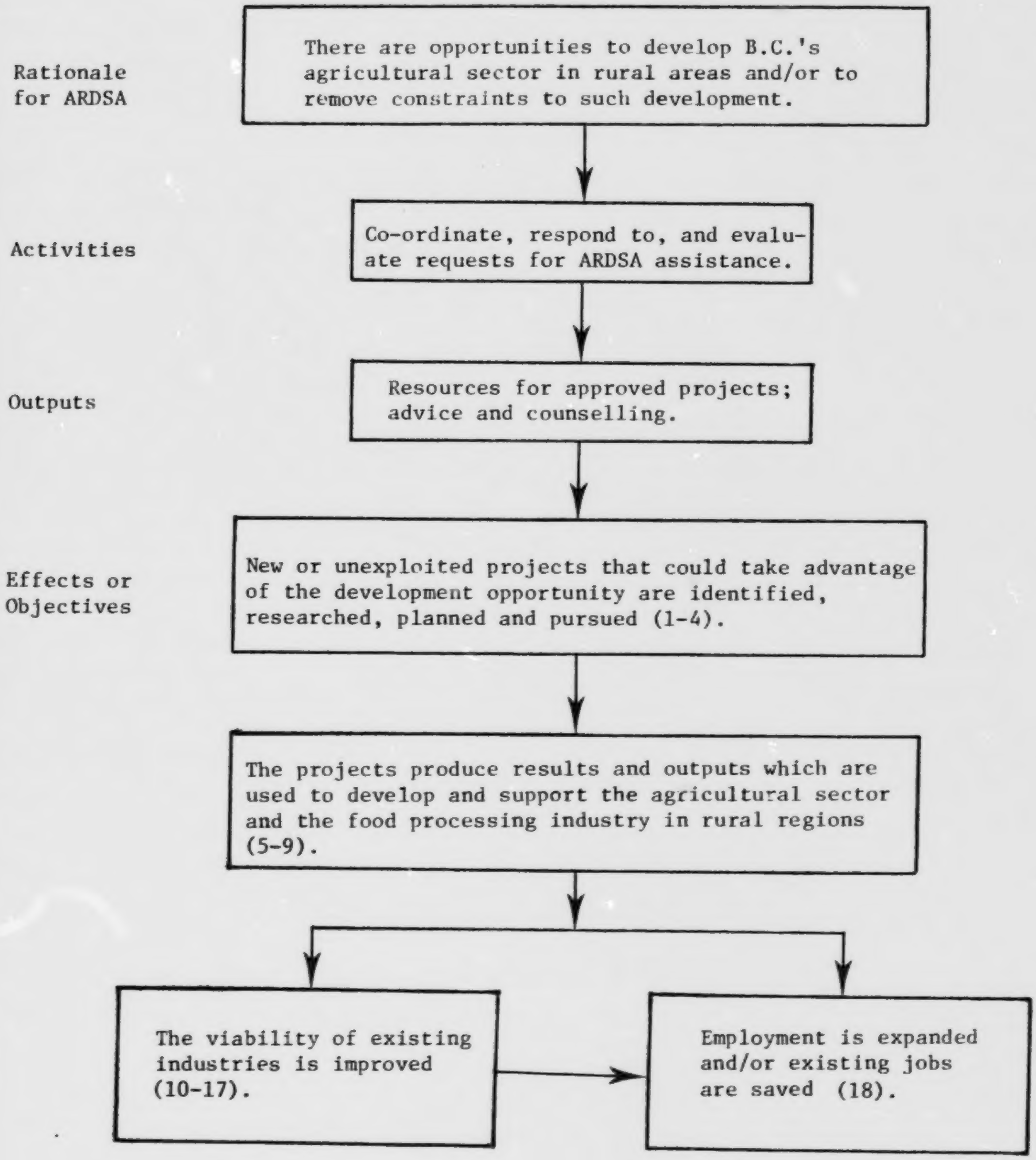
Working Objective	Associated Performance Indicator
1. To identify, research, plan and pursue new or unexploited projects that could take advantage of the opportunity to develop B.C.'s agricultural sector.	1. Total number of projects.
	2. Descriptive profile of projects undertaken and general opportunities identified, researched, etc.
	3. Total ARDSA funds committed by DREE and B.C.
	4. Diversification of funded projects.
2. To improve the viability of existing industries to sustain growth by developing and supporting the agriculture sector and the food processing industry in rural regions.	5. Expected total number of range units, farms, ranchers, acres, companies etc. to be developed and supported.
	6. Actual physical improvements to range, farms, rural areas and industry.
	7. New investment stimulated by private sector.
	8. Issues resolved that previously detracted from attraction of rural areas.
	9. Services provided that now increase the attraction of rural areas.
	Description of the extent to which "viability" has been actually improved, including increases in:
	10. Production capability.
	11. Actual production.
	12. Ability of existing firms or industries to diversify.
	13. Productivity.
	14. Competitiveness.

Table 7.1 Continued

Working Objective	Associated Performance Indicator
	15. Import replacement
	16. Efficiency.
	17. Stability.
3. To expand employment and help save jobs in those existing aspects of the agriculture industry and food processing industry in B.C. which demonstrate production and market potentials.	18. Number of jobs created and/or saved.

FIGURE 7.1

INTENDED CAUSAL RELATIONSHIP FOR ARDSA


Rationale for ARDSA
There are opportunities to develop B.C.'s agricultural sector in rural areas and/or to remove constraints to such development.
Activities
Co-ordinate, respond to, and evaluate requests for ARDSA assistance.
Outputs
Resources for approved projects; advice and counselling.
Effects or Objectives
New or unexploited projects that could take advantage of the development opportunity are identified, researched, planned and pursued (1-4).
The projects produce results and outputs which are used to develop and support the agricultural sector and the food processing industry in rural regions (5-9).
The viability of existing industries is improved (10-17).
Employment is expanded and/or existing jobs are saved (18).

The remainder of the Chapter describes the extent to which ARDSA achieved its overall working objectives.

7.2 OBJECTIVE ONE : UNDERTAKE DEVELOPMENT PROJECTS

ARDSA's first working objective is:

> To identify, research, plan and pursue new or unexploited projects that could take advantage of the opportunity to develop B.C.'s agricultural sector.

Progress has been made in achieving this objective. As of December 31, 1981, 318 ARDSA projects had been approved. Their total cost is $99.6 million. DREE and the province have each committed $21.9 million while the private sector's investment is $55.8 million. Table 7.2 describes the spatial diversification of the approved projects.

Nearly all of the projects could be considered to be "new" or "unexploited". For example:

- Opportunities for the improved production, processing and marketing of new and existing commodities were researched and identified in 30 projects utilizing $2.5 million in ARDSA funds.

- Crown Range land and under-developed farm land are being improved by 119 projects and $23.2 million in ARDSA funds.

- The opportunity to diversify and expand the food processing industry is exploited by 69 projects and $9.8 million in ARDSA support.

- There are 48 projects supported by a total of $3.9 million in ARDSA funds to specifically pursue the opportunity to make rural life more attractive, basically through the provision of electricity to rural areas.

Table 7.2 presents the spatial diversification of the ARDSA projects.

TABLE 7.2

DIVERSIFICATION OF TOTAL ARDSA PROJECTS BY REGIONAL DISTRICT

Regional District	Number of Approved ARDSA Projects	% of Total ARDSA Funds
Alberni-Clayoquot	1	.9%
Bulkley-Nechako	12	3.9
Capital	9	2.2
Cariboo	34	8.0
Cent. Fraser Valley	17	8.6
Central Kootenay	4	.7
Central Okanagan	12	4.4
Columbia Shuswap	4	.6
Comox-Strathcona	3	.5
Cowichan Valley	1	-
Dewdney-Alouette	7	1.4
East Kootenay	14	2.8
Fraser-Cheam	8	5.5
Fraser-Fort George	3	.6
Greater Vancouver	15	6.5
Kitimat-Stikine	2	.3
Kootenay Boundary	12	1.7
Nanaimo	2	.6
North Okanagan	11	3.9
Okanagan-Similkameen	30	13.5
Peace River-Liard	23	6.8
Powell River	1	-
Skeena-Queen Charl.	1	.7
Squamish-Lillooet	2	5.8
Sunshine Coast	1	.1
Thompson-Nicola	41	9.3
Not Applicable to a Specific Regional District	48	11.0
	318	100.0%

By funding a diverse range of projects in a variety of agricultural and geographical areas, ARDSA has attempted to strengthen and develop B.C.'s agricultural sector, thus contributing to the important GDA objective of diversification in B.C.'s economy.

7.3 OBJECTIVE TWO : SUPPORT AND VIABILITY

The second overall working objective of ARDSA is:

> To improve the viability of existing industries to sustain growth by developing and supporting the agricultural sector and the food processing industry in rural regions.

In an effort to improve the viability of existing industries, ARDSA has provided a range of support and development assistance. Here is a summary of the effort that has been made for these industries:

- Beef Industry: This existing industry received considerable ARDSA support in an effort to improve its viability. For example, 32% of Part One's research and training funds ($1.5 million) were directed at this industry. Part Two ($13.0 million in ARDSA funds) was specifically aimed at the stabilization and support of the beef industry. With Part Two support, more than three million hectares of Crown Range are to be covered by improved resource management plans. The proposed physical improvements and reductions in resource use conflicts will affect more than 600 ranchers and ARDSA files indicate that such changes will eventually lead to an increase of more than 200,000 Animal Unit Months. A variety of Part Four projects were intended to improve the infrastructure for this industry through the provision of such needed support services as five vet clinics and five improved livestock handling facilities.

- Food Processing Industry: More than 60 different companies in the food processing industry, including 30 companies in the fruit and vegetable industry, have been able to improve their viability by expanding or modernizing with ARDSA assistance.

- Fruit and Vegetable Industry: This industry also received considerable ARDSA support. For example, 21 projects and 21% of Part One's research funds ($1.1 million) were directed at this industry. In addition, as mentioned above, nearly 30 different firms in this industry received Part Four assistance to expand or modernize their processing capability.

- Farmers: More than 390 different farms will have a better opportunity to improve their viability by now being able to introduce new irrigation and drainage works to more than 15,092 hectares of under-utilized or under-developed farm land. ARDSA anticipates that this will bring 980 hectares of new land into production and improve the production capability on another 4,770 hectares. This is an important potential impact, given that the increase in B.C.'s cultivated farmland from 1977-1981 was 44,516 hectares (see Appendix B). In addition ARDSA projects that nearly 1,000 users, including 448 farms (or approximately 2% of the total number of farms in existence in B.C. in 1981; see Appendix B) will eventually have improved electricity and water supply.

Another way to describe ARDSA's efforts to improve the viability of the existing industries is to examine the changes in the "physical plant" that are projected to take place with ARDSA stimulation. These physical improvements cut across existing industries and the total investment costs include:

- $14.5 million worth of improvements to 3.3 million hectares of Crown Range. (This represents 35% of the 9.3 million hectares that were in B.C.'s Crown Range Reserves in 1977.)

- $13.6 million worth of off-farm irrigation and drainage infrastructures.

- $48.5 million worth of capital improvements (i.e. new or modernized processing plants) to food processing firms.

- $10.4 million worth of improvements to electrification and water works.

ARDSA has therefore made a significant effort to introduce those services, infrastructures, and capital improvements which should eventually improve the viability of existing industries to sustain growth. In terms of actual improvements to viability (as measured by actual increases in production, competitiveness, productivity, import replacements, etc.), it is still too early to make broad conclusions. The potential for improved viability is certainly there but measurable results cannot yet be identified nor fully attributed to ARDSA. For example:

- The results of Part One's research, training and marketing projects may not be realized for several years.
- Part Two improvements to Crown Range may require up to 60 years before they produce measurable results and affect the ranchers and the beef industry.
- In only a limited number of cases have farmers completed the on-farm introduction of irrigation and drainage works. The potential exists for increased production of targetted crops but has not yet been fully realized.
- Most of the Part Four infrastructure services (eg: vet clinics, livestock handling facilities, electrification, etc.) have only been recently introduced or are still yet to be completed. As such, their potential impact on viability certainly exists but has not yet been felt to any significant degree.

The one area in which actual and measurable increases in viability have occurred is in Part Four's assistance to secondary processing and value-added industries. In the 11 projects we surveyed, we did observe actual increases in production, competitiveness, diversification, productivity and efficiency.

7.4 OBJECTIVE THREE : EMPLOYMENT

The third overall working objective for ARDSA is:

> To expand employment and help save jobs in those existing aspects of the agriculture industry and food processing industry in B.C. which demonstrate production and market potential.

Here again ARDSA has helped to identify opportunities and to introduce improvements which could ultimately lead to better employment opportunities. However, as of December 31, 1981, ARDSA has had only limited success in meeting this objective. We could not identify any number of measurable jobs that had been created or saved as a direct result of the projects we surveyed in Parts One, Two and Three. Indeed, as will be seen in Chapter Eight, employment creation receives only indirect attention when projects in these Parts are being considered and funded.

Part Four projects had some specific employment targets. Attempts at permanent job creation projects were not successful but the surveyed Part Four projects which modernized or otherwise assisted secondary processing firms were able to meet or exceed their employment goals. Based on our survey results, we have some confidence in the ARDSA forecast that Part Four will create 460 full-time equivalent jobs and save an additional 300 jobs.

CHAPTER EIGHT

OBSERVATIONS AND RECOMMENDATIONS ON IMPLEMENTATION AND DELIVERY ISSUES

8.1 INTRODUCTION

During our evaluation of ARDSA's implementation and delivery we noted eight major issues which have had a major impact on ARDSA's effectiveness and on the extent to which "value-for-money" has been received from the expenditure of ARDSA funds:

- Public Information: How adequate were these activities? Were the right people informed and encouraged to apply for ARDSA assistance?
- Application and Approval Process: Were systems in place to help ensure that the most appropriate projects were identified, approved and funded?
- Cost-Efficiency: Were project expenditures cost-efficient? Were any mechanisms or controls im place to monitor and ensure cost-efficiency? Were true costs (current and future) known?
- Timeliness: How long id it take for an ARDSA project to go through its life cycle? Is that reasonable? Why did delays occur?
- Monitoring and Reporting of Program Results: Were results monitored? Did program management know if "value-for-money" was being received?
- Program Elements and Sectoral Support: Are the most appropriate program elements in place to take advantage of opportunities for development? Which sectors merit continued support?
- Boundaries: How appropriate are the Agreement's geographic boundaries?
- Program Administration: How well is the total process administered, managed and planned for individual projects and for the entire set of ARDSA projects?

The rest of this Chapter examines each issue in detail, illustrates how ARDSA's performance has been affected by that issue, and provides recommendations for improved effectiveness in the future.

8.2 PUBLIC INFORMATION

Observation

With the exception of Part Three, the agriculture community was adequately informed of ARDSA's existence and results.

Supporting Analysis

One of the projects in Part Four was a "public information" project to provide resources and support to ARDSA program managers to assist them in informing B.C.'s agricultural community about the availability (and results) of ARDSA assistance. This was one of the projects we surveyed and in nearly all our interviews we queried people about how they were informed of ARDSA and what did they know of its results.

Participants learned about ARDSA in a variety of ways:

- They were told by the District staff of the Ministry.
- They had been participating in other government support programs.
- They read or heard about ARDSA in magazines or at meetings.

Most participants were aware of what ARDSA was trying to accomplish and most knew of ARDSA activity in their immediate area. (Note: Our sample was somewhat biased because we only spoke with people who were recipients of ARDSA assistance; they would naturally have a knowledge of ARDSA activities.)

Part Three was the exception to the above. We believe that initially, ARDSA was not effectively promoted for its irrigation and drainage assistance. (It should be noted that we sampled from the earlier projects and perhaps today farmers are more familiar with ARDSA.) In most cases, the farmers we spoke with had not been aware of ARDSA; they had been informed by the Agricultural Engineering Branch of the Ministry of Agriculture and Food when they inquired about technical assistance in their search for a solution to their irrigation or drainage problem.

In the sampled Part Three projects, ARDSA was therefore not successful in being "approachable" to the average farmer. In many cases, the person representing the farmers had the background and experience in dealing with government agencies and also the time to stay after the government to argue his case. School teachers, attendance on marketing boards and government work were characteristics of this person. As a result, we were left with the impression that the average farmer does not necessarily even get to Part Three of ARDSA, let alone get his problem defined.

Recommendation

To date in Part Three, there has usually been one key person among the applicants who has known the benefits and has sold the project. Since there are a number of irrigation and drainage problems in existence, ARDSA should strive to reach other potential applicants. One way to do this is to help promote extension work in the area of irrigation and drainage to help farmers recognize the requirement for regional improvements and to appreciate the value of on-farm improvements.

8.3 PROJECT APPLICATION AND APPROVAL PROCESS

Observation

Improvements are needed in the project application and approval process to reduce its time requirements and to increase management's ability to approve and fund those projects which offer the greatest benefit to B.C.'s agriculture sector.

Supporting Analysis

Each ARDSA Part has its own set of guidelines, application forms, evaluation tools, and organizational structure to process and assess requests for ARDSA assistance. A later section of this Chapter describes the significant time required for a proposal to go through this process. We observed other weaknesses in this process which make it difficult for ARDSA managers to select the best set of projects for B.C.'s agricultural industry.

In Part One, there were three areas in which improvements are needed:

- Many proposed projects had numerous objectives. It is difficult to assess exactly what such projects were meant to accomplish, especially in light of the near absence of any precise statements of what the expected outputs of the project were to be. When outputs were stated they were usually either vague (eg: a profile, a development strategy, a demonstration) or led to the decision-makers' expectation that something else would be produced. For example, the stated objectives of the Goals for B.C. Agriculture project led to the incorrect assumption that various targets and goals would be established, whereas the real intent was to merely design a framework for generating such goals.

- We observed very little reference to potential employment impacts in proposals nor in the Project Authorization Sheets. This makes it difficult for decision-makers to assess the extent to which a proposed Part One project might contribute to ARDSA's overall employment objective.

- Part One projects usually require a significant involvement by ARDSA staff or other government personnel. However, these projects are usually proposed and considered without considering nor having an estimate of the project's true impact on manpower requirements. The true project costs are not known.

In Part Two, the project approval process is the area, along with the cost-efficiency of project expenditures, for which we received the most criticism in our field survey. For example:

- Future maintenance costs arising from the significant capital expenditures on the Crown Range are estimated during the application process but it is our opinion that they were not adequately considered in the investment decision. Nor is it clear to range users who is responsible for these maintenance costs even though the signed application forms establish this responsibility. The agriculture community believe they should not be totally responsible for such costs since other sectors of the province benefit from such improvements.

- Co-ordinated and integrated resource management and planning requires co-ordinated and integrated implementation funding. We saw little evidence that this occurred in the approval process. Instead, individual CRMP's were evaluated and funded in isolation with little attention paid to neighbouring range units or pastures. For example, the current application form and cost-benefit analysis do not address nor integrate issues which cut across and affect neighbouring plans and/or projects. There is little, if any, assessment of local, regional and provincial effects and interactions.

- We have limited faith in the ultimate accuracy of the projected streams of costs and benefits in the sampled projects and doubt whether decisions were always made strictly on the basis of them in any case.

There are several opportunities to improve the Part Three approval process:

- The benefit/cost analysis in the projects we surveyed was not of a consistent level of effort. Often the off-farm works are over-specified with costs on the high side, at least in the first writing of a feasibility report, while productivity and benefits are often treated in a very shallow manner and may be high or low.

- There appeared to be little assessment of the market potential for those crops which were to be produced on the new or improved land.

- In general, Part Three projects are considered solely on the basis of not enough or too much water, not from the perspective of total water management.

- It appears that many potentially worthwhile, Part Three projects may be overlooked - either the people with the problem can't get together to define it; or if it is defined and reaches the feasibility stage it gets stopped because of overspecification of off-farm works or underestimation of benefits. St. Mary's would have been stopped except for persistance of farmers to get specifications lowered (and in hindsight specifications might have been more properly lowered still).

There are several opportunities to improve the efficiency and effectiveness of the Part Four approval process:

- The instructions to potential applicants are not clearly understood and this results in time delays while the forms are explained and re-submitted.

- There are no standard formats for financial and project cost statements. This makes it difficult to analyze competing proposals and hinders the ability to measure results.

- Applicants are not aware of the type and amount of legal work they must process to be a successful applicant.

- The guideline presently in place to evaluate the beneficial effects of electrification measure the net present value of the savings from not having to operate a fuel-powered generator. It then uses this value to determine the level of support for an electrification project. However, the formula uses 1979 fuel prices and other costs and is thus not representative of the true savings that would be brought about by electrification.

Recommendations

To help ensure that the "best" set of ARDSA projects are approved and funded we recommend that :

- The objectives and expected outputs of proposed projects, especially in Part One, should be more clearly stated and defined so that decision-makers know what is to be funded.

- Proposals for Part One projects should consider the project's potential employment impact so that the project can be evaluated in terms of ARDSA's overall objectives.

- Project proposals, especially in Part One, should consider and contain a broad estimate of the man-days of government staff that will be required to manage, administer and contribute to that project. True costs will then be known and will prevent government staff from being over-loaded with unplanned-for project commitments.

- Address future maintenance costs more fully in Part Two and clearly designate responsibility for such maintenance.

- Do not view proposed CRMP's in isolation. Consider their impact on neighboring range units and vice versa.

- Recognize that even though the cost-benefit and economic analysis conducted in Parts Two and Three can produce ratios to the last decimal point, they are still crude instruments based on estimates of future results. More sensitivity analysis is required along with an assessment of the likelihood of achieving the projected results.

- Assess the marketability of the crops to be produced on land improved by Part Three projects. For example, if all Part Three projects result in increased production of the same crop category, would there still be a market for that crop at the prices used in the benefit cost analysis?

- In general, Part Three projects should be considered from the point of view of total water management not just the point of view of the major easily identifiable aspect of not enough water or too much water. In irrigation, soil and irrigation water chemistry should be considered in the evaluation of a leaching requirement, if any, so that under-drainage systems can be identified. In drainage, proper assessment of water table control may identify the need for water control structures so that drains may assist in sub-irrigation during critical times of the growing season.

- Prepare Part Three guidelines which will generate a common level of effort in feasibility (benefit/cost) assessments. Cost the off-farm works on the basis of "utility" specifications which satisfy the requirements and will at least match the project life of anticipated on-farm works.

- Conduct detailed estimates of Part Three benefits of increased productivity by comparing information from three sources; namely, discussion with farmers, discussion and extension reports on the subject by knowledgeable Ministry of Agriculture and Food staff and, an evaluation of published boundary condition information dictating potential productivity (soils, climate, etc.). Also, consider the value of getting onto crop land earlier (in case of drainage).

- In Part Three, evaluate the technical feasibility of on-farm improvements. For example, if it's drainage, will underdrains be required extensively or not ("on-farm" cost of draining land can vary from $200 to $600 an acre)?

- Expand and clarify the instructions given to potential applicants to cut down on the amount of time needed to understand and complete the application.

- Provide standard formats for financial and project cost statements in Part Four, thus making it easier to analyze, interpret and measure results. For example, successful applicants should be asked to provide properly prepared financial statements for the life of the ARDSA assistance. Properly prepared statements would be in accordance with generally accepted accounting principles such as accountants' comments or audited statements. This approach would provide a more reliable source of financial data, increase the efficiency of project analysis and audit by government officials and increase the number of agricultural companies and entrepreneurs who utilize proper accounting and financial advice. At present, audited statements are requested only when there appears to be a problem with a particular project. A requirement for all projects to provide audited statements or accountants' comments (which cost less than audits) would make the project review easier. In addition, the availability of financial and accounting advice is likely to have a positive affect on how these projects are operated.

- Make Part Four applicants aware from the beginning of the type and amount of legal work which will be required if they are a successful applicant.

- Re-structure the "cost-benefit measurement rule" to better evaluate the effect of Part Four electrification projects. Some form of escalation should be built into the rule for cost increases with specific attention to fuel costs which have risen dramatically in recent years and form a major portion of the costs of operating on-site generators.

8.4 COST EFFICIENCY OF PROJECT EXPENDITURES

Observation

We did not conduct an "efficiency audit" nor did we observe any significant examples in which there was a lack of due regard for matters of economy and efficiency. However, there are a number of weaknesses in the systems used to ensure cost-efficiency. These weaknesses detract from ARDSA's overall ability to expend ARDSA funds in the most efficient manner.

Supporting Analysis

There are a number of systems used in ARDSA to evaluate, monitor and approve project expenditures. The "cost-efficiency" of these project expenditures is defined as the comparison of such costs to what the expenditures produce as outputs (i.e. research reports, drainage ditches, fences, new processing equipment, etc.).

We observed a number of weaknesses which detract from ARDSA's ability to expend ARDSA funds in the most efficient manner.

First, although some fencing standards are laid down by regulations from the B.C. Ministries of Highways and Forests, there are few guidelines to clearly define what constitutes a cost-efficient expenditure. For example, there is little clear direction on standards for Part Two fencing or for Part Three irrigation and drainage works. As a result, a common concern voiced by many ARDSA participants and shared by ourselves is that certain projects and improvements could have been over-specified or over-designed. For example, in Part Three:

- It is likely that the St. Mary's Prairie irrigation project would never have got a start if the farmers hadn't trimmed back on the initial high specifications. Even so, the completed project demonstrated the most sophisticated works (pump and intake facility) of any of the projects we sampled. The farmers are happy with the pump facility now that it is in place but they believe that something more "utility" (i.e. with the same useful life but at a lower standard) would have sufficed.

- The Oliver #18 drainage system was trimmed from a budget projection of about $180,000 to $60,000. This project however might have been even less expensive with something more utility.

Second, management's ability to monitor and control efficiency is weakened by the fact that the project outputs are sometimes poorly defined. In the absence of a clear definition of what is to be produced by a project's expenditures, it is difficult if not impossible to ensure cost-efficiency. We observed several such examples in Part One:

- Several projects call for "economic analyses" or "evaluations" or "demonstrations" to be conducted as part of the project. These terms are not defined and lead to problems of differing expectations between program managers and project participants.

- Several projects have called for such vague outputs as "economic profiles", or "strategic plans" or "simulation models" without clearly establishing the meaning and expectations for such terms.

Third, and most importantly, there is little or no motivation for the agricultural sector to be cost efficient in some expenditures. This is most evident when contrasting some of the requirements of Part Three versus Part Two. In Part Three, participating farmers in the irrigation of drainage projects had to contribute, on average, 25% of the project's total costs. It was also clear that they would be responsible for certain maintenance costs. As a result, these farmers had a vested interest in the scale and scope of the project. They were vitally concerned about cost-efficiency.

In fact, most farmers believed that the off-farm works in a first draft of the plan were often over-specified and brought down to earth by arguments from the farmers. This situation contrasts with Part Two in which 10% of project costs were to be contributed by Range users. But, as is seen later in this Chapter, such contributions are only sporadically collected. Such a situation lessens the motivation for Part Two participants to be cost efficient.

Recommendations

To resolve some of the above problems we recommend that ARDSA management should:

- Establish clearer guidelines or standards for certain expenditures such as fencing and irrigation or drainage works.
- Clearly define the project's expected outputs and estimate the total true cost of the project.
- Be more consistent in collecting the required contribution from the private sector to increase the motivation to be cost-efficient.

8.5 TIMELINESS

Observation

ARDSA was meant to be a "timely" program. It was to react quickly to requests for assistance. This has not happened. In a significant number of cases, the time required to evaluate, approve and complete ARDSA projects has been excessive. This has not only delayed the introduction of any potential ARDSA benefits into B.C.'s agricultural sector, but has damaged the credibility and acceptance of the program.

Supporting Analysis

Each Part of ARDSA has examples of delayed impacts:

- Part One: On average it took three months from the time a complete application was received and declared eligible to the time when the applicant was informed that the project could proceed. Our Chapter dealing with Part One has already made references to numerous projects which were sometimes up to two years late. (For example, the Beef Industry Study - Phase Two was to have been finished by June, 1979. The report was received by ARDSA in March, 1980 and the industry association received its copy in September, 1980.)

- Part Two: Only 17 projects (out of 87 approved projects) had been completed at the time of our evaluation.

- Part Three: On average, it took five months from the time a complete application was received to the time when the final decision was communicated to the successful applicant. At the time of our evaluation, only nine projects were considered complete to the extent that the proposed irrigation and drainage works had been installed both on and off the farm.

- Part Four: The time required from the date when the initial application is declared eligible to the time when the application is "complete" has averaged six to eight months and has sometimes taken up to 21 months. Much of this time is epent by the applicant meeting all the information requirements of the ARDSA program so that evaluators can in turn complete their evaluation of the proposed project. Delays in this time frame arise from such factors as the lack of understanding on the applicant's behalf of ARDSA's requirements. Once the application was declared complete, Part Four was quite "timely" in that in the majority of cases, the projects which were supported took from one and one half months to three months to go through the evaluation process prior to informing the successful applicant.

The major impact of these points is that there were delays in generating ARDSA benefits to B.C.'s agricultural sector. There are two other important impacts:

- In our opinion, potential ARDSA applicants can become frustrated and refuse to participate in such government programs. This damages the credibility of the program in the eyes of the industry.

- The projects had been evaluated, approved and funded on the basis of the expectation that the agriculture industry would start to receive results by a certain date. It is possible that had the decision-makers known the actual completion dates for these projects, different funding decisions might have been made.

We examined Part One projects in greater detail to identify the reasons for the "timeliness" problems. They included:

- We were told of a major influx of applications at the beginning of the program with insufficient resources to process and evaluate them.

- Several projects had scope changes and this required extensions to the termination dates.

- Numerous representatives from Steering Committees, Project Sub-Committees, Technical Sub-Committees and the funding agencies become involved in the management of the project life cycle.

- In some instances, the original completion dates were overly ambitious, given the complexity of the projects and the number of outputs to be produced.

- In many instances, it was not clear what the project's objectives were and what was to be the output of the study.

Recommendations

The management of ARDSA should instill a greater sense of urgency in the whole process. The importance to B.C.'s agricultural sector of timely projects needs to be stressed. For example:

- Program manager's performance should be partly assessed based on their results in this area.

- The status of project applications and ongoing projects should be monitored and reported to the appropriate level of management.

- Clear accountability needs to be established to identify the one person responsible for ensuring and reporting on the timely success and completion of each ARDSA project.

- Now that there is a sufficient "inventory" of project applications, the Management Committee should meet on an "if and when required" basis to ensure that every complete application is decided on (and the decision communicated to the applicant) within a month of it being received.

With the implementation of the above recommendations, ARDSA benefits will flow more rapidly to B.C.'s agriculture sector and the high level of criticism we have observed about delays in the process will be reduced.

8.6 MONITORING AND REPORTING OF PROGRAM RESULTS

Observation

Although ARDSA has been in existence for more than four years and its expenditures now exceed $32 million, there is little information on the program's impact. As a result, there is a limited data base to evaluate ongoing and competing requests for assistance, to design future initiatives, and to know whether value for money has been received from these sizeable expenditures.

Supporting Analysis

As part of our evaluation, we requested ARDSA staff to compile Data Sheets for each ARDSA project. These Sheets "characterized" each project in terms of its expected results. We also requested information on actual results (eg: actual number of demonstrations that took place, actual amount of on-farm improvements made, actual increase in forage production, etc.). With the exception of certain Part One projects, there was little if any data on what has happened as a result of ARDSA. Nor does there appear to have been any efforts to obtain and report such data on a routine basis.

Recommendations

It is essential for program managers and senior management to know on a regular basis what is happening as a result of ARDSA. Only then can they measure the extent to which value for money is being received and whether certain projects are likely to succeed or fail. Only with such information can they properly design ARDSA-type initiatives for the future.

To help address this vacuum of information about ARDSA, we recommend that:

- Every ARDSA project, before it is funded, should have an agreed-upon evaluation mechanism built into it. This would state how the project would be evaluated, using what indicators, and by what independent person or agency.

- At an agreed-upon time after the termination of the project, conduct the previously agreed-upon evaluation. The time required for such an independent evaluation should vary with the size and complexity of the project. For example, it could be as straight forward as contacting the people who requested the project to see if the project's objectives have been met and if they are satisfied. (In our current evaluation of ARDSA we reviewed 47 projects. The average time required to review the file, contact project participants, compare actual results to expected results, and document our findings was two man-days.)

- The data from the above evaluations should be aggregated and reported so that the program's overall performance in known.

- A data base is required for the long range evaluation of Part Two. We recommend that priority should be given to the work proposed by the Committee for Quantification of Resource Benefits from Co-ordinated Resource Management.

8.7 PROGRAM ELEMENTS AND SECTORAL SUPPORT

As indicated in Chapter Two, our survey was not broad enough nor is the program yet mature enough to draw specific conclusions as to what program elements or geographical and industrial sectors deserve continued support from ARDSA-type initiatives. However these broad observations and recommendations can be made as an input to consideration of directions for future agriculture development programs in B.C.:

- Most industry representatives with whom we spoke indicated that they had not been given the opportunity to propose and discuss the type of program elements that would be beneficial to their industry. We recommend that more effort should be made in approaching the various commodity groups to determine what type of ARDSA programs would best benefit their members.

- The planning projects in Part One had limited success and ARDSA's stated goal of producing commodity and geographical plans has not been achieved nor will it likely be achieved. ARDSA management should therefore re-assess and question the ability of such government programs to successfully carry out such planning activities.

- In future ARDSA-type initiatives, some priority should be given to encouraging intensification of forage production on private lands, including the critical spring and fall range.

- In Part Two, there was a consensus amongst many participants (ranchers and government officials alike) that in general there was an apparent tendency to over-fence. Fencing does not necessarily increase forage production and its relative effectiveness as a program element in Part Two should be further examined.

- In Part Two, immediate attention should be given to making provisions for the future maintenance and renovation of capital improvements.

- The type of permanent job creation projects funded under Part Four did not meet their objectives and were more related to forestry than to agriculture. Given the recently-announced government job creation initiatives, this type of programming should therefore be dropped or re-structured.

8.8 GEOGRAPHIC BOUNDARIES

During our evaluation, we found no evidence that ARDSA's impact would be heightened nor hampered by a change to the Agreement's geographic boundaries.

8.9 PROGRAM ADMINISTRATION

There are three areas in which the overall administration and management of ARDSA can be improved:

- There is a need for a Project Reporting System to routinely inform ARDSA's senior management and program managers about the "status" of current projects (i.e. Is the project on time? Within budget? Likely to achieve its objectives?) and the status of proposed projects (i.e. How many are there? How long have they been waiting for approval?). Such a system is especially important for the larger, more visible projects.

- The Agreement requires that 10% of the costs associated with Part Two implementation of CRMP's be provided by the local range users. To date, the total costs for Part Two projects are $20.5 million. The eventual contribution from the private sector is thus $2.0 million. A policy statement concerning this 10% local contribution was issued in 1978. However, there are no systems in place to monitor and report regularly on these accounts. No estimate is available as to how much should have been collected and no estimate is available as to how much has been collected. We recommend that ARDSA introduce improved administrative procedures to deal more effectively with this $2.0 million item. As was mentioned previously, if the 10% rule is not properly administered, there is a danger that the Plans will not be taken seriously by those agencies or users who have no clear financial or administrative accountability. There is little or no motivation to be cost-efficient in the expenditure of $20.5 million.

- In Part Four, progress payments to ARDSA recipients are on a "percentage of expenditures" basis. This tends to delay payments and the recipient must seek interim financing. To lower the cost of such financing and thus reduce the costs to the B.C. agriculture sector, we recommend that progress payments for approved projects should be made on a percentage completion basis with a 15% holdback until the project is completed and a payment of the holdback when total project expenditures are fully substantiated by receipts.

APPENDIX A

OVERVIEW OF ALL ARDSA PROJECTS

Note: This Appendix contains a listing of all ARDSA projects as of December 31, 1981. It "characterizes" each project by its name, total project costs, the costs eligible for assistance, the costs committed by DREE and the Province and the committed costs of the private sector or the local community. The expected results, as determined in the project proposals, are indicated when they were available in DREE's B.C. Implementation System. Projects with which the Project Team had a prior involvement were excluded from the field survey and are indicated by an asterisk.

OVERVIEW OF ARDSA PART 1 PROJECTS
RESEARCH, PLANNING, PROMOTION
DECEMBER 31, 1981

PROJECT NUMBER	PROJECT NAME	LOCATION	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE	OUTPUT/OBJECTIVE
RESEARCH, PLANNING, PROMOTION								
APPL.RESEARCH STUD MKT.DEVEL & PILOT DEM								
271002	FRUIT AND VEGETABLE COLOR AND	OKANAGAN VALLEY	160,000	160,000	60,000	60,000	40,000	Develop & test new sorter machine
271007	SWINE INDUSTRY STUDY	BC	60,000	60,000	30,000	30,000		Identify opportunities; Plan
271008	RANGELAND SEEDER EVALUATION	KAMLOOPS	109,660	109,660	54,830	54,830		Evaluate this technology
~~271011~~	~~MOBILE FARM MANAGEMENT CLINIC~~	~~BC~~	~~46,000~~	~~46,000~~	~~23,000~~	~~23,000~~		Test new training tools
271012	NARAMATA AND LAKE AREA STUDY	NARAMATA	55,000	55,000	20,625	20,625	13,750	Identify better handling methods
271015	RANGE RENOVATION EQUIPMENT ...	INTERIOR B.C.	788,840	788,840	394,420	394,420		Demonstrate new equipment
271026	ACCELERATED GRAPE CERTIFICATIO	SIDNEY	26,212	26,212	13,106	13,106		Develop facilities for virus free stock
271030	TOMATO HARVESTING STRATEGY	WHITE ROCK/VICT	3,426	3,426	1,713	1,713		Develop harvesting strategy
271032	MAXAN LAKE RESEARCH PROJECT	BURNS LAKE-32KW	9,752	9,752	4,876	4,876		Soil & forage sample analysis.
~~271034~~	~~FRUIT DEHYDRATOR~~	~~KALEDEN~~	~~15,186~~	~~15,186~~	~~4,639~~	4,639	5,908	Test a new technology
271036	FRASER VALLEY IRRIGATION DESIG	LOWER FRASER VA	44,964	44,964	22,482	22,482		Determine irrigation requirements
271037	HYDROCOOLING OF CHERRIES	SUMMERLAND	86,360	86,360	12,847	12,847	60,666	Test existing technology
271038	PEACE RIVER COMMUNITY PASTURE	OMINECA-PEACE	174,000	74,000	87,000	87,000		Demonstrate new mgt techniques
271039	RABBIT INDUSTRY STATUS & OPP.	B.C.	8,100	8,100	4,050	4,050		Opportunities in this industry
271040	TISSUE CULTURE PROPAGATION	KELOWNA	126,600	126,600	15,825	15,825	94,950	Test a technology
~~271042~~	~~SHELLFISH CULSH & REARING TRAY~~	~~POWELL RIVER NR~~	~~0~~		0	0		Test a technology
271044	MUSHROOM COMPOST REPLACEMENT	LOWER MAINLAND	26,300	26,300	13,150	13,150		Demonstrate commercial viability
271045	ENHANCED STORAGE & SALE-VEGET.	AGASSIZ	179,000	179,000	89,500	89,500		Demonstrate new technology
271046	MECHANICAL SHEEP FEEDING	SOOKE	0		0	0		Develop & test a technology
271047	SHEEP PRODUCTION TECH TRANSFER	SALMON ARM	54,700	54,700	27,350	27,350		Test a technology
271048	BIOLOGICAL CONTROL AGENTS	BC	99,000	99,000	49,500	49,500		Establish a new program
~~271049~~	~~NUTRIENT FILM LETTUCE PROD~~	~~PITT MEADOWS~~	~~39,200~~	~~39,200~~	~~19,600~~	~~19,600~~		Test commercial viability
271300	PILOT PROJECT-SAWDUST BED STRA	SAANICH	30,678	30,678	15,339	15,339		Demonstrate commercial viability
271301	BCFGA VARIETY TESTING ORCHARD	OLIVER	236,600	236,600	59,150	59,150	118,300	a demonstration facility
271302	PACIFIC TRIDENT FISHING CO.LTD	VICTORIA	125,900	125,900	25,000	25,000	75,900	Demonstrate commercial viability
271303	BROILER INDUSTRY DEMON.CENTRE	AGASSIZ	110,000	110,000	26,500	26,500	57,000	a demonstration facility
271306	ZERO-TILLAGE DEMONSTRATION	PEACE RIVER ARE	99,999	99,999	50,000	50,000		Demonstrate technology
~~271307~~	~~LONGLINE OYSTER CULTURE AND CA~~	~~COASTAL B.C.~~	~~259,250~~		~~30,000~~	~~30,000~~	79,250	Demonstrate viability
271310	VIRUS FREE SEED POTATO PRODUCT	CARIBOO REGION	43,000	43,000	10,750	10,750	21,500	Demonstrate technology
271311	BC HONEYBEE STOCK IMPROVEMENT	POWELL R/VERNON	184,340	184,340	89,456	89,456	5,428	Create a new industry
TOTAL SUBPROGRAM			3,202,067	2,842,817	1,254,708	1,254,708	572,652	
SUB-PROGRAM PROJECT COUNT 30								
LONG RANGE AGRI. PLANNING								
271022	ARDSA ORGANIZATION STUDY	VICTORIA	20,000	20,000	10,000	10,000		Review systems & organization
~~271024~~	~~REGIONAL DEVELOPMENT PLANS~~	~~BC~~	~~115,000~~	~~115,000~~	~~57,500~~	~~57,500~~		Regional plans; Priorities
271025	POLICY ANALYSIS OF BEEF IND.	BC	30,000	30,000	15,000	15,000		Simulation model
271027	GOALS FOR B.C. AGRICULTURE	B.C.	13,000	13,000	6,500	6,500		Framework for policy development
271028	MARKETING OPPORTUNITY IDENT.	B.C.	120,000	120,000	45,000	45,000	30,000	Identify opportunities
271031	AGRICULTURAL LAND INVENTORY...	B.C.	18,992	18,992	9,496	9,496		Inventory of land
271035	BEEF INDUSTRY STUDY-PHASE II	BC	50,000	50,000	25,000	25,000		Intensification plan
~~271304~~	~~B. C. FOOD SYSTEM STATISTICS~~	~~B.C.~~	~~23,600~~	~~23,600~~	~~11,800~~	~~11,800~~		Produce comprehensive statistics
271308	ARDSA EVALUATION TERMS OF REFE	B.C.	10,000	10,000	5,000	5,000		Terms of Reference for evaluation

OVERVIEW OF ARDSA PART 1 PROJECTS
RESEARCH,PLANNING,PROMOTION
DECEMBER 31, 1981

PROJECT NUMBER	PROJECT NAME	LOCATION	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE	
271312	INPUT-OUTPUT MODEL FOR BC AGR	BC	34,800	34,800	17,400	17,400		Input-Output model
TOTAL SUBPROGRAM SUB-PROGRAM PROJECT COUNT 10			435,392	435,392	202,696	202,696	30,000	
PROJ. FEAS. & EVALUATION								
271013	PLANNING ASSISTANCE	BC	250,000	250,000	125,000	125,000		Feasibility studies for Part Three
271014	EVALUATION ASSISTANCE	VICTORIA	220,000	220,000	110,000	110,000		Feasibility studies for Part Four
271016	SAANICH PENINSULA IRRIGATION	SAANICH PENINSU	10,254	10,254	5,127	5,127		Irrigation requirements
271017	ENGINEERING STUDY, DISTRICT OF	AGASSIZ	18,250	18,250	9,125	9,125		Feasibility study
271018	PROJECT EVALUATION	B.C.	264	264	132	132		Evaluation procedures for CRMP
271019	PEMBERTON-ECON FEAS. STUDY	PEMBERTON	67,980	67,980	33,990	33,990		Feasibility study
*271020	WESTERN AGRICULTURAL SOCIETY	LOWER MAINLAND	32,200	32,200	16,100	16,100		Feasibility study
271021	FENCEPOST FEASIBILITY STUDY	BC	17,100	17,100	8,550	8,550		Feasibility study
271023	PLANNING ASSISTANCE	BC	400,000	400,000	200,000	200,000		Assistance to Part Three
271033	VANCOVER PRODUCE TERMINAL MKT	VANCOVER	25,940	25,940	12,970	12,970		Feasibility study
271043	CHINESE MUSHROOMS FEASIBILITY	VI/L.MAINLAND	19,842	19,842	9,921	9,921		Feasibility study
271305	SIMILKAMEEN INDIAN BAND ECONOM	SIMILKAMEEN I.R	35,600	35,600	17,800	17,800		Feasibility study
271309	ARDSA PROGRAM EVALUATION PHASE	B.C.	19,300	19,300	9,650	9,650		A base for the entire evaluation
*271313	ARDSA EVALUATION-PHASE II	BC	100,000	100,000	50,000	50,000		The evaluation of ARDSA
TOTAL SUBPROGRAM SUB-PROGRAM PROJECT COUNT 14			1,216,730	1,216,730	608,365	608,365		
MANAGERIAL TRAINING								
271005	GROUP COUNSELLING AND INFORMAL	VARIOUS B.C.	50,000	50,000	25,000	25,000		Deliver rural training
271029	FINANCIAL MANAGEMENT TRAINING	INTERIOR B.C.	17,322	17,322	8,661	8,661		Develop & deliver course to Beef industry
271041	FINANCIAL MANAGEMENT TRAINING	B.C.	524,400	524,400	262,200	262,200		Deliver training to commodity groups
TOTAL SUBPROGRAM SUB-PROGRAM PROJECT COUNT 3			591,722	591,722	295,861	295,861		
TOTAL PROGRAM PROGRAM PROJECT COUNT 57			5,445,911	5,086,661	2,361,630	2,361,630	602,652	

BRITISH COLUMBIA IMPLEMENTATION SYSTEM

OVERVIEW OF ARDSA PART 2 PROJECTS
CO-ORDINATED RESOURCE MANAGEMENT PROGRAM
DECEMBER 31, 1981

PROJECT NUMBER	PROJECT NAME	EXPECTED HECTARS COVERED	EXPECTED NO. OF RANCHERS	EXPECTED AUM'S CREATED	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE
COORDINATED RESOURCE MGT									
CO-ORDINATED RESOURCE MGMT.									
271051	TATLA LAKE RANGE UNIT	109449	2	2736	125,000	125,000	56,250	56,250	12,500
271052	BEAVERDAM RANGE UNIT	44111	3	2800	485,880	485,880	218,646	218,646	48,588
271053	TREMONT CREEK RANGE UNIT	4049	1	452	94,946	94,946	42,726	42,726	9,494
271054	NICKEL PLATE RANGE UNIT	40469	8	5500	494,990	494,990	222,745	222,745	49,500
271055	PINANTAN - LOLO RANGE UNIT	43301	5	4285	258,725	258,725	116,426	116,426	25,873
271056	SKULL MOUNTAIN-WILLOWGROUSE RA	48988	6	1905	211,276	211,276	95,074	95,074	21,128
271057	HARRIS CREEK RANGE UNIT	42897	2	516	74,815	64,815	29,167	29,167	7,481
271058	SKOOKUMCHUCK-FINDLAY RANGE UN.	3210	1	348	2,043	2,043	919	919	205
271059	ALKALI LAKES RANGE UNI1	8903	3	1500	21,371	21,371	9,617	9,617	2,137
271060	DUTCH FINDLAY RANGE UNIT	8215	2	2824	73,352	73,352	33,009	33,009	7,334
271061	KORI RANGE UNIT	1750	10	5361	496,253	352,750	156,736	158,738	49,625
271062	ALEXANDRIA RANGE UNIT	16592	6	828	37,464	10,417	4,688	4,688	3,746
271064	ALMOND CREEK RANGE UNIT	8903	1	190	45,040	45,040	20,268	20,268	4,504
271065	ANARCHIST-SIDLEY-MCKINNEY CREE	18211	7	1100	157,000	157,000	70,650	70,650	15,700
271066	PARKER - FELKER - ONWARD RANGE	24881	3	840	102,882	102,882	46,297	46,297	10,288
271067	GISCOME COMMUNITY PASTURE	1701	5	3400	329,640	225,900	101,655	101,655	32,964
271068	JOHNSON-JAMES CREEK	14146	7	1836	251,682	48,827	21,972	21,972	25,168
271069	BEATTON-DOIG COMMUNITY PASTURE	11534	21	8088	649,536	93,050	41,873	41,873	64,952
271070	NICHOLSON - INGRAM CREEK RANGE	18281	9	3500	258,464	126,656	56,995	56,995	25,846
271071	PHOENIX RANGE UNIT	7689	4	1228	133,877	43,877	19,745	19,745	13,387
271072	PECKHAMS LAKE	7853	8	3855	232,172	12,171	5,477	5,477	23,217
271073	YAHK RANGE UNIT	32780	5	1950	125,380	125,380	56,420	56,420	12,540
271074	HALLIS LAKE COMMUNITY PASTURE	2833	14	3609	399,470	49,470	22,260	22,260	39,950
271075	BURRELL COORDINATED PLAN	30756	2	485	69,500	69,500	31,275	31,275	6,950
271076	TORONTO COORDINATED PLAN	1821	1	149	20,500	20,500	9,225	9,225	2,050
271077	PERRY CREEK - PATTONS LAKE RAN	34398	2	1526	65,000	65,000	29,250	29,250	6,500
271078	PEAVINE RANGE UNIT	11264	1	700	27,020	27,020	12,159	12,159	2,702
271079	KETTLE VALLEY-ROCK MOUNTAIN C.	3484	4	359	58,500	58,500	26,325	26,325	5,850
271080	ONE EYE LAKE SPRING PASTURE	182	4	350	125,000	125,000	56,250	56,250	12,500
271081	FRENCH BAR COORDINATED PLAN	66774	2	678	139,000	139,000	62,550	62,550	13,900
271082	EAST KOOTENAY RANGE IMPROVEMEN	77377	66	0.	2,130,258	152,250	68,513	68,513	213,024
271083	MARTIN MOUNTAIN C.R.M.P.	10522	6	651	205,440	205,440	92,448	92,448	20,544
271084	TOD MOUNTAIN C.R.M.P.	30190	8	1365	146,420	146,420	65,889	65,889	14,642
271085	WEGER MOUNTAIN C.R.M.P.	22986	7	577	102,750	102,750	46,238	46,238	10,274
271086	NORTH BONAPARTE C.R.M.P.	60471	12	2250	393,180	393,180	176,931	176,931	39,318
271087	MELDRUM CREEK STOCK RANGE	36422	5	2065	180,345	180,345	81,155	81,155	18,035
271088	BIG CREEK STOCK RANGE	368271	9	2933	353,320	353,320	158,994	158,994	35,332
271089	SHINGLE CREEK RANGE UNIT	20234	1	2320	178,686	58,328	26,248	26,248	17,869
271090	SUNSET PRAIRIE EXPANSION	12545	35	15100	523,610	373,990	168,295	168,295	52,362
271091	BECHER PRAIRIE CRMP	124370	4	2655	136,467	56,816	25,567	25,567	13,647
271092	GASPARD - GASPARD ALPINE	224915	1	21662	207,083	62,560	28,152	28,152	20,708
271093	ERIC (HORSEFLY STOCK RANGE)	12140	3	960	73,500	40,000	18,000	18,000	7,350
271094	NIQUIDET HORSEFLY STOCK RANGE	12222	4	1355	61,932	9,200	4,140	4,140	6,193
271095	WEST LAC LA HACHE	45587	7	2434	330,990	330,990	148,946	148,946	33,098
271096	PENTICTON/VASEUX CREEK	71468	4	2634	407,408	206,997	93,149	93,149	40,740
271097	OLDTIMER'S MOUNTAIN	10518	4	2440	279,861	104,609	47,074	47,074	27,986
271098	SABISTON CREEK	12141	2	850	134,318	134,318	60,443	60,443	13,432

BRITISH COLUMBIA IMPLEMENTATION SYSTEM

OVERVIEW OF ARDSA PART 2 PROJECTS
CO-ORDINATED RESOURCE MANAGEMENT PROGRAM
DECEMBER 31, 1981

PROJECT NUMBER	PROJECT NAME	EXPECTED HECTARS COVERED	EXPECTED NO. OF RANCHERS	EXPECTED AUM'S CREATED	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE
271099	MCGREGOR (SIX MILE) CREEK	31982	4	955	138,272	87,659	39,447	39,447	13,828
271401	MT. MCLENNAN	10190	6	451	23,698	30,550	13,748	13,748	7,370
271402	BLEEKER LAKE	10249	1	725	121,367	12,987	5,844	5,844	12,137
271403	FOREST LAKE	51345	7	846	104,378	21,268	9,571	9,571	10,437
271404	D'ARCY MOUNTAIN	32780	4	1018	167,200	167,200	75,240	75,240	16,720
271405	SEATON CRMP	7891	3	3000	112,607	98,475	44,314	44,314	11,260
271406	WHITES LANDING COMMUNITY PAST	12141	25	5048	299,381	41,392	18,626	18,626	29,938
271407	FISHERMAN - HARDY CRMP	3804	2	250	41,600	41,600	18,720	18,720	4,160
271409	DOG CREEK PASTURE IMPROVEMENT	3846	6	675	58,800	58,800	26,460	26,460	5,880
271410	BIG BAR - HIGH BAR CRMP	26920	5	1072	207,600	207,600	93,420	93,420	20,760
271411	BADGER CREEK CRMP	16963	11	1435	222,411	95,600	43,020	43,020	22,241
271412	PROMONTORY	22258	4	1071	189,900	189,900	85,455	85,455	18,990
271413	STEAMBOAT CRMP	32205	7	1409	118,221	59,000	26,550	26,550	11,822
271414	CHIPKA-ROCKY/TEE PEE-PLUMBOB	14164	3	1768	187,538	187,538	84,392	84,392	18,754
271415	EDNEY CRMP	14569	2	1320	114,242	114,242	51,409	51,409	11,424
271416	CECIL LAKE CRMP	34500	28	675	469,421	36,300	16,335	16,335	46,942
271417	FLY HILLS CRMP	6151	13	626	40,000	40,000	18,000	18,000	4,000
271418	SUMMERLAND - PEACHLAND CRMP	120499	5	7858	570,200	570,200	256,590	256,590	57,020
271419	INKAMEEP CRMP	52043	5	3635	417,200	417,200	187,740	187,740	41,720
271420	WREN COMMUNITY PASTURE	2860	25	3000	439,125	206,552	92,948	92,946	43,913
271421	DEADMAN CREEK CRMP	70600	8	2893	329,700	329,700	148,365	148,365	32,970
271422	UPPER CACHE CREEK CRMP	69057	16	27141	1,845,905	1,845,905	830,657	830,657	184,591
271423	PASS CREEK CRMP	9069	1	575	47,813	47,813	21,516	21,516	4,781
271424	CROUSE-LOSTHORSE CRMP	23000	1	1059	104,625	104,625	47,081	47,081	10,463
271425	SHOVELNOSE-THYNNE CRMP	34049	2	3572	307,700	307,700	136,440	136,440	34,820
271426	HAINES CREEK CRMP	189068	3	2041	150,600	150,600	67,770	67,770	15,060
271427	MEMEKAY FLATS PASTURE IMPROVE.	385	6	743	49,074	49,074	22,083	22,083	4,908
271428	CRANBERRY RIDGE CRMP	13968	2	615	46,125	46,125	20,756	20,756	4,613
271429	FARRELL CREEK COMMUNITY PASTUR	5020	14	4629	53,680	53,680	24,156	24,156	5,368
271430	GROUNDBIRCH COMMUNITY PASTURE	47773	15	3028	66,688	66,688	30,010	30,010	6,668
271431	BULL LAKE CRMP	11500	2	784	49,936	49,936	22,471	22,471	4,994
271432	GREEN LAKE CRMP	3000	7	2941	288,974	288,974	130,038	130,038	28,898
271433	KING EDWARD/SWALWELL CRMP	59500	9	4730	315,300	315,300	141,885	141,885	31,530
271434	PUNCHAW COMMUNITY PASTURE	280000	13	4811	208,262	208,262	93,718	93,718	20,826
271436	LILY LAKE CRMP	31174	6	6487	539,715	539,715	242,872	242,872	53,971
271437	LOON LAKE CRMP	102430	10	1847	179,210	179,210	80,645	80,645	17,920
TOTAL SUB-PROGRAM SUB-PROGRAM PROJECT COUNT	83	3278757	608	229882	20,087,814	13,909,221	6,257,125	6,257,125	2,012,830
TOTAL PROGRAM PROGRAM PROJECT COUNT	83	3278757	608	229882	20,087,814	13,909,221	6,257,125	6,257,125	2,012,830

Note: In Part Two, "Total Cost" includes any previous ARDA assistance; eligible cost in all cases is the expenditure approved under ARDSA.

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BRITISH COLUMBIA IMPLEMENTATION SYSTEM

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ARDSA PART 2 PROJECTS
CO-ORDINATED RESOURCE MANAGEMENT PROGRAM
DECEMBER 31, 1981

PROJECT NUMBER	PROJECT NAME	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE	PROJECT RESULTS	UNITS	PROJECT RESULTS 2	UNITS
	COORDINATED RESOURCE MGT CO-ORDINATED RESOURCE MGMT.									
271050	AERIAL PHOTOGRAPHY	47,738	47,738	21,482	21,482	4,774				
271063	TECHNICAL SUPPORT FOR C.R.M.P	390,000	390,000	175,500	175,500	39,000				
271408	CRMP MAPPING	7,849	7,849	3,925	3,925					
271435	RANGE FERTILIZATION DEMON PROJ	85,094	85,094	38,293	38,293	8,508	500	HA		
	TOTAL SUB-PROGRAM SUB-PROGRAM PROJECT COUNT 4	530,681	530,681	239,200	239,200	52,282				
	TOTAL PROGRAM PROGRAM PROJECT COUNT 4	530,681	530,681	239,200	239,200	52,282				

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BRITISH COLUMBIA IMPLEMENTATION SYSTEM

OVERVIEW OF ARDSA PART 3 PROJECTS
PRIMARY RESOURCES DEVELOPMENT
DECEMBER 31, 1981

PROJECT NUMBER	PROJECT NAME	LOCATION	EXPECTED HECTARS COVERED	EXPECTED NO. OF FARMS	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE
PRIMARY RESOURCES DEVELOPMENT IRRIGATION									
271100	CHINOOK COVE WATER USERS COMM.	40M N.-KAMLOOPS	87	0	58,955	58,955	22,108	22,108	14,739
271102	WYNNDEL IRRIGATION DISTRICT	NEAR CRESTON	320	0	177,888	177,888	63,373	63,373	51,142
271103	SOUTHERN INTERIOR BEEF CORP.	OLIVER	81	0	148,382	148,382	55,643	55,643	37,096
271104	ALEXANDRIA THREE PHASE POWER	SO. OF QUESNEL	1299	17	572,258	572,258	194,817	194,817	182,625
271106	MCKINNEY ROAD IRRIGATION SCHEM	NEAR OLIVER	129	0	330,000	330,000	123,750	123,750	82,500
271108	ST. MARY'S PRAIRIE IRRIGATION	NEAR CRANBROOK	213	0	498,808	498,808	187,053	187,053	124,702
271109	BIG BAR RANCHES IRRIGATION SCH	25M W.-CLINTON	166	3	187,050	187,050	70,144	70,144	46,762
271111	NICOLA VALLEY 3 PHASE POWER	STUMP LAKE	816	3	243,000	243,000	91,125	91,125	60,750
271113	BASQUE VINEYARDS IRRIGATION SQ	6M S.-ASHCROFT	59	5	147,651	147,651	55,369	55,369	36,913
271114	GLEN VALLEY DRAINAGE PROJECT	FORT LANGLEY	891	0	222,500	222,500	83,438	83,438	55,625
271115	PAXTON LAKE DAM	25M E-KAMLOOPS	30	0	62,800	62,800	23,550	23,550	15,700
271116	CHASE IRRIGATION DISTRICT PIL-	30M E-KAMLOOPS	259	0	57,768	57,768	21,663	21,663	14,442
271117	HEFFLEY IRRIGATION DISTRICT	15M NE-KAMLOOPS	486	0	100,000	100,000	37,500	37,500	25,000
271119	HULLCAR 3 PHASE POWER	5M N.-ARMSTRONG	334	8	183,600	183,600	51,428	51,428	80,744
271121	ENGINEERING STUDY SOUTH EAST	NEAR KELOWNA	0	0	22,100	22,100	8,287	8,287	5,526
271122	SE KELOWNA WASTEWATER IRR STY	NEAR KELOWNA	0	0	42,900	42,900	16,087	16,087	10,726
271124	VON KEYSERLINGK IRRIGATION SCH	VERNON	243	9	698,220	698,220	261,833	261,833	174,555
271125	BARNES LAKE WATER SUPPLY	ASHCROFT	380	4	225,000	225,000	84,375	84,375	56,250
271126	NICOLA LAKE STORAGE PROJECT	MERRITT-N	0	0	64,812	64,812	24,305	24,305	16,203
TOTAL SUB-PROGRAM			5793	49	4,043,692	4,043,692	1,475,846	1,475,846	1,092,000
SUB-PROGRAM PROJECT COUNT 19									
DRAINAGE									
271101	DISTRICT OF KENT-DRAINAGE	AGASSIZ	900	0	240,800		90,300	90,300	60,200
271105	PEMBERTON VALLEY DYKING DISTR.	PEMBERTON	5263	0	3,200,000	3,200,000	1,200,000	1,200,000	800,000
271107	DISTRICT OF SURREY OLD LOGGING	SURREY	260	0	600,000	600,000	225,000	225,000	150,000
271110	NICOMEN ISLAND IMPROVEMENT DI-	DEWDNEY	241	0	328,200	328,200	123,075	123,075	82,050
271118	TOD CREEK DRAINAGE	SAANICH	28	0	200,000	200,000	75,000	75,000	50,000
271120	EAST CHILLIWACK DRAINAGE PROJ-	D.OF CHILLIWACK	1222	0	1,640,000	1,640,000	615,000	615,000	410,000
271123	PITT MEADOWS DRAINAGE - STUDY	PITT MEADOWS	0	0	125,000	125,000	46,875	46,875	31,250
271127	MATSQUI-SIM ROAD DRASINAGE	MATSQUI PRAIRIE	104	5	50,000	50,000	18,750	18,750	12,500
271128	SIMILKAMEEN INDIAN BAND SEC.8	KEREMEOS	720	0	1,840,667	1,840,667	690,250	690,250	460,167
271129	DELTA-NORTH CRESCENT SLOUGH	DIST OF DELTA	520	0	587,000	587,000	220,125	220,125	146,750
TOTAL SUB-PROGRAM			9258	5	8,811,667	8,570,867	3,304,375	3,304,375	2,202,917
SUB-PROGRAM PROJECT COUNT 10									
GENERAL IRRIGATION & DRAINAGE									

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                                           OVERVIEW OF ARDSA PART 3 PROJECTS
                                             PRIMARY RESOURCES DEVELOPMENT
                                                  DECEMBER 31, 1981

PROJECT
NUMBER   PROJECT NAME                      LOCATION            EXPECTED  EXPECTED     TOTAL       ELIGIBLE       DREE          B.C.      LOCAL/OTH
                                                               HECTARS   NO. OF       COST        COST         SHAREABLE     SHAREABLE     SHARE
                                                               COVERED   FARMS                                   COST          COST

271003   SMALL IRRIGATION AND FARM WAT-    B.C.                      0         0       200,000     200,000        75,000        75,000      50,000
271004   FARM DRAINAGE OUTLET ASSIST.      B.C.                      0         0       200,000     200,000        75,000        75,000      50,000
271112   O'CONNOR LAKE DAM INSKIP AND      15M N-KAMLOOPS           41         2       232,000     232,000        87,000        87,000      58,000


 TOTAL SUB-PROGRAM                                                  41         2       632,000     632,000       237,000       237,000     158,000
SUB-PROGRAM PROJECT COUNT        3


TOTAL PROGRAM                                                    15092        56    13,487,359  13,246,559     5,017,221     5,017,221   3,452,917
PROGRAM PROJECT COUNT      32



 *** NOTE: EXPECTED NUMBER OF FARMS IS NOT LISTED
ON SOME PROJECTS DUE TO ITS VARIABILITY AND THESE
FIGURES WERE NOT RECORDED ON OUR SYSTEM
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OVERVIEW OF ARDSA PART 4 PROJECTS
SUPPORT SERVICES & COMMUNITY DEVELOPMENT
DECEMBER 31, 1981

PROJECT NUMBER	PROJECT NAME	DIRECT JOBS	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE
	SUPPORT SERVICES & COMMUNITY DEV'T SERVICE TO ASSIST PRIM. PRODUCTION						
271203	WEST COAST LAND DRAINAGE SPEC.	2	184,500	140,000	31,776	31,776	120,948
271223	CONAGRA RESOURCE MANAGEMENT CO	0	151,200	151,200	15,120	15,120	120,960
271226	VALLEY FARM DRAINAGE	2	148,500	148,500	25,000	25,000	98,500
271227	DR. D.O. OLSEN, KAMLOOPS VETER	5	184,000	164,000	29,709	29,709	124,582
271232	OTTER FARM & HOME CO-OPERATIVE	0	721,500	721,500	71,092	71,092	579,316
271233	S. SPETIFORE AND SONS LTD.	22	772,750	590,000	123,464	123,464	525,822
271235	DR. WIELAND, CHETWYND VETERINA	3	157,500	135,000	24,375	24,375	108,750
271236	DR. IAN THANE, KOOTENAY VETERI	3	176,995	121,792	21,901	21,901	133,193
271237	COMMUNITY AUCTION SALES ASSN.L	0	43,150	43,150	4,278	4,278	34,594
271247	COR-EL FOOD CORPORATION	3	139,028	114,000	20,700	20,700	97,628
271263	D & G AGRI-CHEM SERVICES LTD.	5	238,000	200,300	36,412	36,412	165,176
271267	NORWEST-PRIVA PLANT LABS.INC.	5	151,500	123,000	20,850	20,850	109,800
271270	TATAL ROSE FARMERS INSTITUTE	0	46,500	31,500	3,938	3,938	38,625
271285	J & L FEEDS LTD.	7	775,300	461,632	74,334	74,334	461,632
271287	SANDERS POULTRY FARMS LTD.	6	355,946	281,946	28,195	28,195	299,557
271288	VERNON VETERINARY CLINIC	5	213,050	111,350	11,350	11,350	190,350
271293	BIG A TANK SERVICES LTD.	3	116,000	106,000	15,228	15,228	85,544
*271294	VALLEY AUCTION LTD.	4	215,070	212,070	21,185	21,185	172,700
271650	SOUTH CARIBOO ANIMAL HOSPITAL	2	295,000	240,000	30,000	30,000	235,000
271667	BEAR MOUNTAIN FEEDERS LTD.	2	348,690	182,690	24,636	24,636	299,418
	TOTAL SUBPROGRAM	79	5,434,179	4,279,630	633,542	633,542	4,002,095
	SUB-PROGRAM PROJECT COUNT 20						

BRITISH COLUMBIA IMPLEMENTATION SYSTEM

OVERVIEW OF ARDSA PART 4 PROJECTS
SUPPORT SERVICES & COMMUNITY DEVELOPMENT
DECEMBER 31, 1981

SUPPORT SERVICES & COMMUNITY DEV'T
RURAL COMMUNITY DEVELOP.

PROJECT NUMBER	PROJECT NAME	DIRECT JOBS	EXPECTED NO. OF USERS	EXPECTED NO. OF FARMS	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE
271000	LILY LAKE ROAD POWER PROJECT	0	17	10	181,980	181,980	37,737	37,737	25,500
271010	SODA CREEK POWER	0	3	2	41,403	41,403	4,303	4,303	19,997
271205	MILLIGAN CREEK POWER	0	27	21	368,085	368,085	92,021	92,021	49,643
271206	SHINGLE CREEK POWER EXTENSION	0	10	8	95,651	95,651	30,998	30,998	15,000
271207	111 MILE VALLEY POWER EXTENSIO	0	14	6	174,932	174,932	43,733	43,733	21,000
271208	ABBOTT ROAD POWER EXTENSION	0	3	3	48,816	48,816	6,330	6,330	16,956
271209	LONE PRAIRIE POWER EXTENSION	0	5	5	68,713	68,713	14,607	14,607	7,499
271211	GORDON CREEK POWER	0	3	3	48,702	48,702	7,878	7,878	19,770
271212	ARCHIE MEADOW ROAD POWER EXTEN	0	3	3	40,896	40,896	10,224	10,224	4,500
271213	MINNIE LAKE EXTENSION PROJECT	0	8	8	153,473	153,473	29,937	29,937	58,283
271214	PIGEON ROAD POWER EXTENSION	0	8	8	67,517	67,517	12,863	12,863	12,000
271219	BIG CREEK COMMUNITY POWER	0	12	5	245,035	245,035	61,259	61,259	45,717
271220	LYNX CREEK RURAL ELECTRIFICAT.	0	3	3	35,395	35,395	5,848	5,848	4,500
271228	GREEN MOUNTAIN ELECTRIFICATION	0	22	19	230,995	230,995	65,498	65,498	43,000
271230	ONE ISLAND LAKE ROAD POWER EXT	0	10	8	157,195	157,195	27,245	27,245	38,705
271241	DOG CREEK RURAL ELECTRIFICATIO	0	34	12	450,000	450,000	89,000	89,000	54,400
271251	CAMPBELL LAKE EXTENSION	0	8	7	59,500	59,500	4,857	4,857	27,070
271252	CHARLIE LAKE NORTH RURAL ELECT	0	0	3	40,000	40,000	8,000	8,000	4,800
271253	MILE 24, ALASKA HIGHWAY RURAL	0	3	3	31,423	31,423	3,712	3,712	4,799
271254	JACKFISH LAKE ROAD RURAL ELECT	0	4	4	43,121	43,121	6,194	6,194	6,000
271255	KNIFE CREEK ROAD RURAL ELECTRI	0	8	5	149,625	149,325	37,406	37,406	23,613
271256	WHITES LANDING/PLETT RD. RURAL	0	5	5	61,209	61,209	6,816	6,816	15,577
271272	FISET LAKE RURAL ELECTRIFICAT	0	5	5	33,500	33,500	3,533	3,533	8,000
271273	RAIL LAKE ROAD EXTENSION	0	8	8	88,926	88,926	5,506	5,506	26,714
271274	JUDSON ROAD EXTENSION	0	3	3	44,346	44,346	9,185	9,185	6,776
271275	HALLAMORE LAKE EXTENSION	0	6	6	47,884	47,884	2,373	2,373	9,000
271276	LOST CREEK POWER EXTENSION	0	3	3	20,025	20,025	3,343	3,343	6,690
271277	DUNN LAKE EXTENSION	0	7	7	46,655	46,655	3,999	3,999	19,700
271278	WALCOTT WEST ROAD, R.E.	0	4	4	56,000	56,000	8,550	8,550	14,900
271279	ECHO LAKE RURAL ELECTRIFICATIO	0	9	0	74,776	74,776	5,447	5,447	13,500
271286	MILE 30 ALASKA HIGHWAY	0	10	6	86,335	86,335	3,841	3,841	27,453
271289	DEKOSTER RD. EXTENSION	0	6	2	32,000	32,000	6,763	6,763	5,674
271290	BECKER RD. RURAL DEVELOPMENT	0	12	0	72,000	72,000	10,056	10,056	24,300
271291	BLAEBERRY RURAL ELECTRIFICATIO	0	3	3	14,076	14,076	3,519	3,519	5,030
271297	SUMAS PRAIRIE WATER SUPPLY	0	600	200	5,885,000	5,885,000	981,250	981,250	3,922,500
271653	BASTIN ROAD	0	4	4	52,700	52,700	3,884	3,884	20,592
271654	PROGRESS SOUTH-POWERLINE EXTEN	0	5	5	45,000	45,000	5,900	5,900	8,200
271655	CAMPBELL CREEK POWER EXTENSION	0	3	3	40,200	40,200	8,637	8,637	10,126
271656	LEE CREEK EXTENSION	0	3	3	65,372	65,372	12,465	12,465	21,242
271657	BARNES LAKE AND YD POWER EXTEN	0	2	2	80,000	80,000	20,000	20,000	27,200
271658	WEBSTER LAKE ROAD R.E.	0	3	3	58,069	58,069	11,150	11,150	16,569
271659	MCKENZIE EXTENSION	0	5	5	52,000	52,000	8,143	8,143	22,914
271660	STEVE PRICE EXTENSION	0	4	4	45,045	45,045	9,550	9,550	15,145
271666	SUSKWA FLATS POWER PROJECT	0	9	9	90,325	90,325	8,268	8,268	34,041
271670	NORTH PRESPATOU EXTENSION	0	4	4	52,250	52,250	5,000	5,000	12,650
271671	SOUTH BUICK EXTENSION	0	4	4	41,400	41,400	4,800	4,800	9,600
271672	GOODLOW EXTENSION	0	4	4	36,740	36,740	1,785	1,785	3,570

BRITISH COLUMBIA IMPLEMENTATION SYSTEM

OVERVIEW OF ARDSA PART 4 PROJECTS
SUPPORT SERVICES & COMMUNITY DEVELOPMENT
DECEMBER 31, 1981

PROJECT NUMBER	PROJECT NAME	DIRECT JOBS	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE
271672	GOODLOW EXTENSION	0	36,740	36,740	1,785	1,785	3,570
TOTAL SUBPROGRAM SUB-PROGRAM PROJECT COUNT 48		0	10,020,290	10,019,990	1,769,913	1,769,913	4,843,415

PROCESSING FOR VALUE-ADDED

PROJECT NUMBER	PROJECT NAME	DIRECT JOBS	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE
271001	CRESTON CO-OPERATIVE PACKERS	0	300,000	300,000	29,982	29,982	240,036
271200	B.C. COAST VEGETABLE CO-OP.ASS	14	1,094,300	1,094,300	137,497	137,497	819,306
271201	J & L MEATS CO. LTD.	10	666,000	666,000	108,950	108,950	448,100
271202	KOHLER'S EUROOEAN SAUSAGE LTD.	10	1,171,200	1,071,200	93,651	93,651	983,898
271204	WESTVALE FOODS LTD.	4	130,600	130,600	18,320	18,320	93,960
271210	MCCLEAN AND FITZPATRICK LTD.	0	700,000	700,000	69,369	69,369	561,262
*271215	KINGFISHER ENTERPRISES LTD.	20	600,000	495,000	98,509	98,509	402,982
271216	NORTHERN GEM FOODS LTD.	7	210,000	210,000	19,379	19,379	171,242
271217	MAJUBA FOODS LTD.	5	122,700	85,848	21,462	21,462	79,776
271221	INLAND FEEDERS LTD.	6	101,265	101,265	13,058	13,058	75,149
271222	COLONIAL FARMS LTD.	31	483,200	379,200	85,085	85,085	213,030
271225	SHUSWAP OKANAGAN DAIRY INDUSTR	1	222,324	222,324	21,499	21,499	179,326
271231	CHATEAU JONN DE TREPANIER ESTA	3	0		0	0	
271234	TRANS-PACIFIC FISH LTD.	23	1,195,000	1,195,000	194,785	194,785	805,430
271238	SEMIAHMOO BAY SHELLFISH LTD.	8	926,742	767,912	95,989	95,989	734,764
271239	ST. JEAN'S HOLDINGS INC./ST.	2	261,800	182,800	27,614	27,614	156,572
271240	FRASER VALLEY FROSTED FOODS LT	0	148,000	148,000	14,800	14,800	118,400
271242	WESTERN PROTEIN FOOD CORP. LTD	10	342,500	287,500	46,169	46,169	250,162
271243	TOP SHELF FEEDS LTD.	3	0		0	0	
271244	VICTORIA FARM MEAT SERVICES LT	10	226,200	173,200	27,972	27,972	170,256
271246	NOEL RODDICK FERTILIZERS LTD.	1	249,040	187,540	21,572	21,572	110,896
271248	SOUTHERN INTERIOR BEEF CORPORA	4	471,201	471,201	60,000	60,000	351,201
271249	SUN RYPE PRODUCTS LTD.	14	1,961,158	1,961,158	208,206	208,206	1,544,746
271250	ARCTIC GRAIN LTD.	11	1,050,000	1,049,000	142,500	142,500	765,000
271257	FRASER VALLEY MUSHROOM GROWERS	12	2,650,000	1,150,000	171,875	171,875	2,306,250
*271258	ROGERS WHOLESOME FOODS LTD.	27	1,846,882	1,746,882	214,588	214,588	108,706
271259	WEST COAST COOLING LTD.	9	157,050	152,050	21,668	21,668	113,714
271260	CLOVERDALE LETTUCE AND VEGETAB	9	150,000	145,000	21,075	21,075	107,850
271261	SUN DEW FOODS LIMITED	8	334,000	274,000	40,387	40,387	253,226
271262	EUROPAC SEAFOODS LTD.	28	490,100	470,100	81,075	81,075	327,950
271264	SIMILKAMEEN UNITED GROWERS' CO	3	162,500	162,500	15,935	15,935	130,630
271265	VANDERPOL'S EGGS LTD.	4	375,000	165,000	21,825	21,825	331,350
*271266	THOMAS A. STEEVES LTD.	19	1,452,479	1,042,661	145,197	145,197	1,162,085
*271268	HARMONY SEAFOODS LTD.	4	68,916	50,986	11,967	11,967	14,982
271269	WALCAN SEAFOODS LTD.	13	629,000	435,000	60,493	60,493	338,014
271271	BULKLEY VALLEY AGRO-DEVELOPMEN	8	131,847	93,947	16,625	16,625	98,597
271280	VERNON FRUIT UNION	0	1,682,000	1,532,000	153,200	153,200	1,375,600
271282	LAKE AREA CO-OP GROWERS' ASSN.	0	1,549,302	1,549,302	154,930	154,930	1,239,442
271283	WESTBANK PACKERS LTD.	0	705,000	705,000	70,442	70,442	564,116
*271284	REDONDA SEA FARMS LTD.	4	93,821	49,690	12,423	12,423	68,976
271292	PAN-READY POULTRY LTD.	21	950,400	584,000	58,400	58,400	833,600

OVERVIEW OF ARDSA PART 4 PROJECTS
SUPPORT SERVICES & COMMUNITY DEVELOPMENT
DECEMBER 31, 1981

PROJECT NUMBER	PROJECT NAME	DIRECT JOBS	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE
271295	I.M.KRISP FOODS LTD.	3	201,557	154,412	26,496	26,496	148,565
271296	OKANAGAN DRIED FRUITS LTD.	7	111,706	91,706	15,349	15,349	81,009
271299	PAN-READY POULTRY LTD.SOOKE PL	104	3,200,000	1,357,000	307,625	307,625	2,584,750
271651	SCOTT'S MEATS LTD.	3	165,000	165,000	16,500	16,500	132,000
271652	FRASER VALLEY PROCESSORS LTD.	15	0		0	0	
271661	MERRYFIELD CATTLE CO. LTD.	6	630,000	490,000	68,750	68,750	492,500
271662	VINITERA WINES LTD.	3	378,400	298,400	41,250	41,250	295,900
271663	OLIVER-OSOYOOS CO-OP GROW.ASSN	13	410,000	365,000	36,500	36,500	337,000
271664	EAST CHILLIWACK AGRICULT.CO-OP	53	4,000,000	2,637,000	375,000	375,000	3,000,000
271665	SUN RYPE PRODUCTS LTD.	0	3,245,000	1,558,000	155,800	155,800	2,933,400
271668	WESTERN GREENHOUSE GROWERS CO.	5	685,000	685,000	89,525	89,525	505,950
271669	PITT MEADOWS MEAT PACKERS	5	406,384	328,384	44,423	44,423	317,538
271673	OCEAN SPRAY OF CANADA LTD.	9	1,390,000	1,390,000	75,000	75,000	1,240,000
271674	B.C.BLUEBERRY COOPERATIVE ASSN	1	75,000	75,000	7,500	7,500	60,000
271675	NARAMATA CO-OP GROWERS'EXCHANC	0	865,000	865,000	86,500	86,500	692,000
271676	CONSUMERS' CO-OP ASSN.	4	306,724	304,724	30,473	30,473	245,779
271677	SUN DEW FOODS LTD.	6	38,114	38,114	8,205	8,205	21,704
271678	MONASHEE CO-OP GROWERS' ASSN.	0	953,200	953,200	95,350	95,350	762,500
271679	GOLDEN VALLEY PROCESSORS INC.	6	1,024,215	974,215	97,422	97,422	829,372
271680	LAWRENCE MEATS LTD.	10	142,435	142,435	14,250	14,250	113,935
271682	SUMMERLAND WINES LTD.	5	492,500	377,500	53,650	53,650	385,200
	TOTAL SUBPROGRAM	624	44,781,762	35,437,256	4,474,039	4,474,039	33,829,684
	SUB-PROGRAM PROJECT COUNT 62						
	RURAL EMPLOYMENT						
271218	CORPORATION OF DISTRICT OF SUM	37	305,832	305,832	114,687	114,687	76,458
271224	WINLAW WOOD FARMERS CO-OP	7	51,901	51,901	16,146	16,146	19,609
271281	FOREST STAND IMPROVEMENT PROJ.	8	100,000	100,000	40,000	40,000	20,000
271681	REID COLLINS NURSERIES LTD.	28	585,010	585,010	18,500	18,500	548,010
	TOTAL SUBPROGRAM	80	1,042,743	1,042,743	189,333	189,333	664,077
	SUB-PROGRAM PROJECT COUNT 4						
	PUBLIC INFORMATION						
271006	PUBLIC INFORMATION	0	250,000	250,000	125,000	125,000	
	TOTAL SUBPROGRAM	0	250,000	250,000	125,000	125,000	
	SUB-PROGRAM PROJECT COUNT 1						
	TOTAL PROGRAM	704	56,094,795	46,749,989	6,558,285	6,558,285	39,337,176
	PROGRAM PROJECT COUNT 115						

APPENDIX B

BASELINE DATA FOR THE AGRI-FOOD SECTOR AND RURAL COMMUNITIES IN BRITISH COLUMBIA

APPENDIX B

BASELINE DATA FOR THE AGRI-FOOD SECTOR AND RURAL COMMUNITIES IN BRITISH COLUMBIA

	Key Indicators	1977	1981
1.	Number of farms	19,800 farms	20,800 farms
2.	Cultivated farmland	785,107 hectares	829,623 hectares
3.	Farm cash receipts	$520.2 million	$884.7 million
4.	Apple production	314.6 million pounds	412.2 million pounds
5.	Vegetable receipts	$37.1 million	$64.3 million
6.	Cattle numbers	712,000 head	773,000 head
7.	Pig numbers	65,000 head	245,000 head
8.	Barley production	167,000 metric tonnes	209,000 metric tonnes
9.	Milk sales by farmers	411 million litres	476 million litres
10.	Poultry sales	89.8 million pounds	112.8 million pounds

Note: Livestock numbers are for July 1st of each year.

Source: B.C. Agri-Facts

Prepared by: H.H. Bryce, Statistician
B.C. Ministry of Agriculture & Food

APPENDIX C

TERMS OF REFERENCE
PHASE II EVALUATION OF ARDSA

CANADA - BRITISH COLUMBIA

July 31, 1981

AGRICULTURE AND RURAL DEVELOPMENT SUBSIDIARY AGREEMENT

(ARDSA)

TERMS OF REFERENCE

FOR A

PHASE II EVALUATION OF ARDSA

I. PURPOSE

The purpose of Phase II of the ARDSA Evaluation Study is to assess the effectiveness of the ARDSA program in meeting its stated goals and objectives within the context of the provincial agri-food industry, and based on this assessment, to make recommendations relating to the current Agreement and possible future initiatives. This assessment is required to meet the evaluation requirements of Federal and Provincial governments, as well as to meet the stipulated requirement for evaluation which forms part of the Agreement.

II. BACKGROUND

The Agriculture and Rural Development Subsidiary Agreement (ARDSA) is one of a number of subsidiary agreements which fall under a General Development Agreement (GDA) signed by the Province of British Columbia and the Government of Canada in 1974. The ARDSA, which is equally cost shared by the two levels of government, has a budget of $60 million and consists of four program components:

I Research, Planning, Training and Market Promotion
II Co-ordinated Resource Management
III Primary Resources Development
IV Support Services and Community Development

The present ARDSA expires in July, 1982, and the signatory agencies to the agreement are desirous of knowing whether the subsidiary agreements' objectives have been met. An assessment of the programs carried out under the Agreement with regard to the stated objectives is required under Section 10(1) of ARDSA. A Phase I Evaluation study has been recently completed and provides some, but not all, of the framework required for a Phase II study. The Phase I report focussed on the evaluation of program effort (rather than achievement) and contains a number of useful hypotheses to be tested in Phase II.

III. OBJECTIVES OF THE PHASE II EVALUATION OF ARDSA

1. To respond to the evaluation requirements of Federal and Provincial central agencies, including the assessment of cost efficiency of project expenditures.
2. To assess the effectiveness of ARDSA programming in meeting its stated goals, objectives and intent and to assess the degree of progress achieved.
3. To assess the impact of ARDSA expenditures on the agri-food industry in B.C.
4. To assess the socio-economic impact of ARDSA expenditures on rural areas in B.C.
5. To assess the implementation of ARDSA as it relates to the overall effectiveness of the program.
6. To provide an input to consideration of directions for future agriculture development programs in B.C., particularly the feasibility of continued development funding in the various program areas/industry sectors/eligible areas.

IV. ARDSA EVALUATION STUDY - PHASE II TASKS

The evaluation process to be followed by the consultant in conducting the PHASE II Study is outlined below:

BACKGROUND

1. review the legal ARDSA and GDA documentation, current program and project status and mechanisms for implementation.
2. gain an appreciation of the policy framework and intent which formed the basis of the Agreement at its inception in 1977.
3. review and document the baseline data for the agri-food sector and rural communities in B.C. in 1977 and now, based on available sources of published data.
4. review the Phase I Evaluation Study and consolidate its substance, conclusions and tentative hypotheses such that these will be sufficiently covered to enable the Phase II report to stand as a complete evaluation document.

PROGRAM REVIEW AND ASSESSMENT

5. carry out a program review and assessment of all projects funded to date using relevant measures such as project scale, distribution across regions and industry sectors, degree of private contribution, projected project rate of return, projected employment generated, etc.

6. carry out an intensive analysis of completed projects, based on a field survey which gathers actual project results.

7. economic, socio-economic and financial indicators of performance are to be developed and utilized in carrying out the intensive analysis of completed projects.

8. assess program implementation mechanisms as they relate to program effectiveness; including, eligibility criteria, program guidelines, project selection procedures and program administration.

IMPACT ASSESSMENT

9. based on the foregoing program/project assessment, conduct an impact assessment of ARDSA by assessing the effectiveness of the ARDSA program in meeting its stated goals and objectives, and by assessing its impact on the agri-food industry in B.C., the socio-economic impact on rural areas and unintentional impacts where identified.

SUMMARY/CONCLUSIONS

10. prepare a summary of the evaluation and the conclusions so obtained (including those of the Phase I Evaluation).

RECOMMENDATIONS

11. based on the data and analysis contained in the program review and impact assessment conducted, prepare recommendations relating to the current Agreement and possible future initiatives, including consideration of the direction and scale of programs in terms of industry sector and geographic areas which have been funded. The scope of the recommendations should include consideration of:

    - program elements which should be enhanced, modified, renewed or discontinued, with emphasis on the relative returns from incremental expenditures in each of the ARDSA programs;

    - the appropriateness of the geographic boundaries of the agreement;

    - the appropriateness of continued assistance to industry sectors which have been funded to date under the agreement;

    - improvements to program effectiveness that might result from changes in eligibility criteria, program guidelines, project selection procedures and program administration.

V. REPORT PREPARATION

The consultant will be expected to prepare a Final Report in the following suggested major sections:

EXECUTIVE SUMMARY
BACKGROUND (Tasks 1-4)
PROGRAM REVIEW AND ASSESSMENT (Tasks 5-8)
IMPACT ASSESSMENT (Task 9)
SUMMARY/CONCLUSIONS (Task 10)
RECOMMENDATIONS (Task 11)

An Interim Report will be required at the end of the Program Review and Assessment section. The Interim Report is to be completed within five months from the date of authorization to proceed. A Final Report will be due within ten months from the date of authorization to proceed. Twenty copies each of the Interim and Final Reports will be required.

All relevant data, information, documents, reports, draft or otherwise, gathered or prepared by the consultant during the project are to be turned over to the Evaluation Steering Committee.

VI. STUDY COST

The budget ceiling for the Phase II Study is $90,000 for fees and expenses.

VII. LIAISON AND CO-ORDINATION

The Phase II Evaluation Study will be managed by an Evaluation Steering Committee composed of members of the four signatory agencies (the Department of Regional Economic Expansion, the Ministry of Agriculture and Food, Agriculture Canada, and the Ministry of Industry and Small Business Development). The Steering Committee will be directly involved at all stages and will review all outputs at a draft stage and all major steps prior to their being undertaken. Frequent working meetings will be required between the Consultants and the Steering Committee. A contract will be established with the ARDA Branch, British Columbia Ministry of Agriculture and Food. Four copies of the proposal should be submitted to Mr. T. Horbulyk, ARDA Branch, British Columbia Ministry of Agriculture and Food, 808 Douglas Street, (2nd floor) Victoria, B.C. V8W 2Z7 no later than 2:00 P.M. Friday August 21, 1981 to be considered.

VIII. CONTENTS OF THE PROPOSAL

1. Outline of qualifications of the firm in terms of relevant project experience.

2. A presentation of the proposed approach and methodology.

3. Proposed project work plan and proposed staff assignments in person days.

4. Curricula Vitae of proposed project staff and applicable per diem rates.

5. Proposed subcontractors or associates and project tasks to be undertaken by each to be included in the proposal.

6. Project budget breakdown against the work plan prepared.

IV. PROPOSAL PREPARATION

The proposal call period will extend to August 21, 1981. In order to provide any additional background or information deemed necessary to prepare a proposal, the Evaluation Steering Committee will be available on August 10, 1981 to meet with interested consultants at the offices of Ministry of Agriculture and Food, 5th Floor Boardroom. To schedule this meeting contact T. Horbulyk at 387-5121.

For any questions concerning the proposal, the consultant may contact the members of the Evaluation Steering Committee in Victoria as follows:

Mr. R. Ion, Development Analyst
Department of Regional Economic
Expansion
(388-3183)

Mr. T. Horbulyk, Head
Research Division
ARDA Branch
British Columbia Ministry
of Agriculture & Food
(387-5121)

Ms. D. McLaren
Development Economist
Agriculture Canada
(388-0271)

Mr. J. Robertson
Senior Economist
or Mr. C. Caple
Senior Business Analyst
British Columbia Ministry of
Industry and Small Business
(387-5883)

To provide background for proposal preparation, the following documents are enclosed:

- copies of the GDA and ARDSA
- ARDSA Progress Reports #1 and 2, covering the period from August, 1977 to August, 1980
- ARDSA Evaluation Study Phase I*
- ARDSA Monthly Financial Summary*

* These are not public documents and should be returned by August 21, 1981.

Further information and additional
copies of this publication may be obtained from:

THE PUBLICATIONS OFFICE
B.C. MINISTRY OF AGRICULTURE AND FOOD
PARLIAMENT BUILDINGS, VICTORIA, B.C.
V8W 2Z7

REGIONAL DEVELOPMENT AND INTERNATIONAL
AFFAIRS BRANCH
AGRICULTURE CANADA
1016 JOHNSON STREET
VICTORIA, B.C.
V8V 3N7

Number/
Numéro

2

Province of British Columbia
Ministry of Agriculture and Food

Government of Canada
Gouvernement du Canada
Agriculture Canada

SUMMARY REPORT:

THE EVALUATION OF ARDSA

Project Number 271313

Under

Canada-British Columbia Subsidiary Agreement on

Agriculture and Rural Development

Prepared by:

Ernst & Whinney
Management Consultants
505 - 910 Government Street
Victoria, B.C. V8W 1X3

NOVEMBER 1982

Province of
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FOREWORD FROM THE ARDSA CO-CHAIRMEN

November 15, 1982

In July, 1977, the Governments of Canada and British Columbia signed the Agriculture and Rural Development Subsidiary Agreement (ARDSA), agreeing to commit up to $60 million to projects which would identify or pursue opportunities for development, which would expand employment in the agriculture and food sector, and which would improve the viability of the existing industries to sustain growth.

The agreement was signed on behalf of Canada by the Minister of Regional Economic Expansion and the Minister of Agriculture. On behalf of British Columbia, the agreement was signed by the Minister of Economic Development and the Minister of Agriculture.

The term of the original agreement was five years (1977-1982), and the program has been extended one further year by mutual agreement of the signatory agencies. Projects authorized prior to July 31, 1983 will have until October 31, 1984 for completion of approved works.

As a condition of funding, the signatory agencies agreed to jointly undertake an assessment of the programs carried out under ARDSA, and to evaluate these programs with respect to the general development objectives given in the agreement. In order that the results would be available for continued planning, the program was to be reviewed during the third year of implementation.

The evaluation study reported here represents one of the first attempts to formally evaluate the effectiveness of a large development program using research resources from outside the government agencies involved. It was the purpose of this study to assess the effectiveness of the ARDSA program to date in meeting its objectives and to make recommendations relating to the program and possible future initiatives. A number of related evaluation issues such as appropriateness of stated objectives, adequacy of total program resources, equity of distribution of program benefits, program implementation and delivery, and efficiency of program expenditures were either excluded from the analysis at this time or given secondary importance.

The ARDSA program has proven amenable to evaluation with respect to the extent to which specific program objectives are being met, but little information has been reported on the broader impact these results are having on the agriculture and food sector. Experience gained during the course of this study has shown that the degree to which this program can be accurately assessed by an independent consultant with a limited budget will be constrained by a number of principal factors, such as program size, complexity, availability of data, and program maturity. Accordingly, few recommendations related to future programming have been provided.

As co-chairmen of the federal/provincial management committee responsible for the ARDSA program, it is our intention to provide the results of this study to industry and program participants, and to others concerned with the development of the agriculture and food industry.

It is through thorough evaluation and balanced appraisal of programs currently in place, that the provincial and federal governments are better able to meet the challenges facing the agriculture and food industry in the future.

John Berry

J.H. Berry
Director
Agriculture and Food
Development (British Columbia)
Agriculture Canada
(Federal Co-Chairman)

Peterson

S.B. Peterson
Deputy Minister
British Columbia Ministry
of Agriculture and Food
(Provincial Co-Chairman)

ACKNOWLEDGEMENTS

This study was funded by a grant from the Research, Planning, Training and Market Promotion program of the Canada-British Columbia Agriculture and Rural Development Subsidiary Agreement. The Agreement, which provides a variety of programs for Agriculture and Rural Development, is cost shared equally by the governments of Canada and British Columbia through Agriculture Canada and the Ministry of Agriculture and Food respectively. Programs under the agreement are administered by the Ministry of Agriculture and Food and managed by a joint Federal/Provincial committee.

The responsibility for the report as written and all conclusions reached herein, is the consultants' alone, and does not necessarily reflect the opinions of those who assisted during the course of this investigation and the Federal and Provincial governments which funded the study.

The Project Manager for the study was Mr. Ted Semmens of Ernst & Whinney. He also surveyed Part One. Mr. Gary Runka, of Land Sense Ltd. reviewed Part Two while Mr. Gary Kennedy, of Canadian Bio Resources examined Part Three. Mr. David Hughes and Mr. Bernie Magnan of Ernst & Whinney had the primary responsibility for Part Four. The entire report was typed and produced by Mrs. B. Olan of Ernst & Whinney.

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EXECUTIVE SUMMARY

INTRODUCTION

In March, 1974, the governments of Canada and British Columbia signed a General Development Agreement (GDA) to improve opportunities for productive employment in B.C. and to promote balanced development in the province. As part of GDA, the Agriculture and Rural Development Subsidiary Agreement (ARDSA) was signed in July, 1977. It expires in July, 1982.

This $60 million jointly-shared federal/provincial program recognized that there are opportunities to develop B.C.'s agriculture sector. Its stated objectives are:

- To identify, research, plan and pursue new or unexploited projects related to the development of B.C.'s agriculture industry.
- To expand employment in those existing aspects of the agriculture industry and food processing industry in B.C. which demonstrate production and market potential.
- To improve the viability of the existing industries to sustain growth.

Ernst & Whinney was requested to evaluate the extent to which ARDSA, and each of its four Parts, has met these objectives. To accomplish this, we developed and tested an evaluation methodology, conducted a field survey of nearly 200 participants from 47 ARDSA projects (nearly all of which were complete at the time of our evaluation) and reviewed existing file information on the intended and actual impact of ARDSA funding. This report contains the results of our evaluation and presents a range of recommendations to improve program effectiveness in the future.

STUDY LIMITATIONS

Our ability to make conclusions about the effectiveness and actual performance of ARDSA in total and of each ARDSA Part was hampered by the lack of file data on actual results and the study's scope which called for a relatively small field survey sample (47 completed projects) compared to the number and diversity of ARDSA projects (318 in total). As a result, many observations on actual results and effectiveness have been limited to our 47 sampled projects. Whenever possible, information from ARDSA files was used to expand the scope and breadth of our conclusions about intended and actual results.

Because the study's scope excluded non-completed projects from our field survey, we were not able to report on any results which may already be accruing from projects which are not yet completed. This limited our ability to draw substantiated conclusions about potential impacts.

Similarly, our ability to make recommendations about program elements or future support to sectors and geographical areas was limited by the lack of file data on actual results, the small size of the sample, and the survey's focus on completed projects rather than a representative sample of all funded projects. For example, it was difficult to recommend which program elements should be enhanced, modified, discontinued or modified due to the lack of statistically valid data on the relative returns from incremental expenditures in each of the ARDSA programs.

In spite of the above limitations, we believe that this evaluation has been able to successfully meet nearly all of its objectives.

OVERVIEW OF ARDSA PROJECT ACTIVITY

Progress has been made in identifying, researching, planning and pursuing projects to take advantage of the opportunity to develop B.C.'s agricultural sector. As of the date of our evaluation (December 31, 1981), 318 ARDSA projects had been approved. Their total cost is $99.6 million. DREE and the province have each committed $21.9 million in ARDSA funds while the private sector's investment is $55.8 million.

This project activity is diverse and has cut across nearly all sectors and geographical areas in B.C.'s agriculture industry. For example:

- Opportunities for the improved production of new and existing commodities are being researched and identified in 30 projects utilizing $2.5 million in ARDSA funds.
- Crown Range land and under-developed farm land are being improved by 119 projects and $23.2 million in ARDSA funds.
- The opportunity to diversify and expand the food processing industry is being exploited by 69 projects and $9.8 million in ARDSA support.
- There are 48 projects supported by a total of $3.9 million in ARDSA funds to specifically pursue the opportunity to make rural life more attractive, basically through the provision of electricity to rural areas.

By funding a diverse range of projects in a variety of agricultural and geographical areas, ARDSA has attempted to strengthen and develop B.C.'s agricultural sector, thus contributing to the important GDA objective of diversification in B.C.'s economy.

Four different ARDSA Parts have funded this project activity:

- Part One (Research, Planning, Training and Market Promotion) projects address the need to identify, plan and research opportunities in the industry.

- Part Two (Co-ordinated Resource Management) projects attempt to improve the utilization of Crown Range land.

- Part Three (Primary Resource Development) projects introduce irrigation, drainage, and flood control infrastructures outside the farm gate.

- Part Four (Support Services and Community Development) projects introduce new or modernized infrastructures and facilities in rural areas and in the secondary processing industries.

We examined separately the relative impact and contribution of each Part.

IMPACT AND CONTRIBUTION OF PART ONE: RESEARCH, PLANNING, TRAINING AND MARKET PROMOTION

Part One has committed $4.8 million in ARDSA funds to 57 diverse projects in an attempt to introduce a wide variety of new and existing technologies, products, skills and services to the province's agricultural industry. The focus of this effort has been on trying to help the B.C. agricultural industry take advantage of potential opportunities for increased employment and agricultural production. For example, Part One projects are attempting to demonstrate and transfer 11 known technologies ranging from abalone aquaculture to zero tillage techniques for grain growers. Four projects are attempting to pilot test the applicability and commercial viability of such known technologies as hydrocoolers and rangeland seeders while four "applied research" projects are developing and testing new technologies, primarily for fruit commodities. Part One also examined the feasibility of four new ventures (including the production of Chinese mushrooms and the treating and marketing of fence posts) and analyzed market opportunities for nine different product groups, including rabbits, bees, oysters and a variety of vegetable commodities. Two new demonstration facilities are also being established with Part One assistance, one for the broiler industry and one for the tree fruit industry.

Part One has therefore made a significant effort to assist the agriculture industry in taking advantage of opportunities for employment and increased production. However, there is little evidence that this major effort has yet paid off in terms of exploited opportunities, new employment or increased production. One reason for the low level of measurable impacts to date is that many of the projects pursuing the objective are still not complete. For example, there was only one completed demonstration project at the time of our evaluation (the Mushroom Compost Replacement Demonstration project) and it did not achieve its objectives. The only completed pilot test of a known technology (the Cherry Hydrocooler) indicated that such technology was not viable. We did not observe any instances in which Part One has been able to establish the commercial viability of an existing technology and to date only one new technology (the Fruit Dehydrator) has been successfully developed, tested and introduced to the industry. The one "market opportunity" study we surveyed (the Swine Industry Study) produced results that were not used nor deemed relevant by the industry. The feasibility studies were successful in making conclusions about the feasibility (or non-feasibility in two cases) of four different ventures, but to date there is little evidence that the feasible ventures have been pursued.

Part One has been successful in its efforts to develop, deliver and evaluate a number of training courses and concepts for more than 3,000 participants from the agricultural sector. Such training has primarily focussed on improving financial management skills in the beef industry. Part One has also been successful in assisting program managers in Parts Three and Four with the implementation of their respective Parts, primarily through the funding of a range of feasibility and economic analysis studies.

Although Part One has attempted to develop several planning tools, Part One's objective to develop a variety of Regional and Commodity Plans has not been met since little actual planning has taken place. Only one Regional Plan (for the Peace River Region) has been produced. Part One has produced only one Commodity Plan, a Strategic Plan for the intensification of the B.C. beef industry. It was generally well received by the industry and is believed to have stimulated activity in the beef sector. Part One attempted to produce a long run Strategic Plan for the swine industry but no Plan was developed.

IMPACT AND CONTRIBUTION OF PART TWO: CO-ORDINATED RESOURCE MANAGEMENT

The carrying capacity and under-utilization of Crown grazing lands provides a unique opportunity for increased forage production. However, in the past there have been conflicts amongst users of this land resource. To resolve this problem, Part Two has committed $13.0 million in ARDSA funds to 87 ARDSA projects (covering more than 100 different Range Units and 608 ranchers) to develop and improve the grazing capacity of Crown Range so that the forage production capability can be better utilized by the beef industry in harmony with forestry, recreation and wildlife interests. Part Two was to accomplish this through the implementation of "high quality" Co-ordinated Resource Management Plans (CRMP's). The Agreement states that Part Two was to implement 220 CRMP's. This objective has not yet been met since only 17 Part Two projects had been completed at the time of our evaluation.

We conducted a field survey of ten Part Two projects. They were generally successful in meeting certain objectives: resource conflicts have been reduced, the education of users has improved, any extra forage production is being utilized, and in the majority of cases, use considerations for wildlife, recreation and timber were well integrated. As a result, we believe that these ten projects have had some role in assisting to increase the B.C. cow herd against national trends, (For example, B.C.'s cattle numbers increased 5% in the period 1977-1980 while the Canadian total decreased 6% in the same period.) We also believe it is premature at this time to retrieve actual data related to ARDSA's impact on increased forage production capability (i.e. additional Animal Unit Months).

These Part Two projects are attempting to make a contribution to the overall ARDSA objective of improving the viability of B.C.'s existing agricultural industry. In the ten sampled projects, the improvements of the range (forage) resources and their integrated use in the long run should contribute to an improved beef industry viability.

Part Two has yet to make any significant contribution to ARDSA's "employment" objective. To date the ten Part Two projects we surveyed have had limited success in creating employment opportunities. It is our understanding that even at the outset, Part Two was never intended to be a big job creator. As a result, there was very little evidence in our survey and in the files that this overall ARDSA objective has been addressed or achieved to any measurable extent. We did find scattered opportunities for temporary jobs, such as range riders for grazing seasons. There were also a very small number of production units at which owners had slight increases in staff or farm family employment. There is also the possibility that jobs might be saved in the future due to the improved viability of the ranch units.

IMPACT AND CONTRIBUTION OF PART THREE: PRIMARY RESOURCES DEVELOPMENT

Many B.C. farm lands have soil moisture deficits or surpluses. But producers first need infrastructure outside the farm gate before they can install drainage, irrigation or flood control projects on the farm. To help resolve this issue, Part Three has committed $10.1 million in ARDSA funds to 32 approved projects to introduce $13.5 million of off-farm improvements so that farmers in turn can introduce on-farm irrigation and drainage works to 15,092 hectares of B.C. farm land. ARDSA files indicate that 980 new hectares will eventually be brought into production and an additional 4,770 hectares will eventually be improved so that production can be increased for those crops which demonstrate market and production potential. Since only nine projects can be considered complete to the extent that all the on-farm works have been introduced, most of these intended results have likely not yet occurred.

We surveyed seven completed projects. They have achieved most of their intended results. That is, they reached their objective of establishing irrigation and drainage works off the farm, thus enabling the introduction of the needed new works on the farm. The viability of the farm units has thus been strengthened. Production capability has been increased to the targetted levels and is being utilized, although not necessarily for those products with the greatest market and production potential.

There was little evidence that ARDSA's overall employment objective was met in the Part Three projects we surveyed. In most cases the construction of the off-farm and on-farm improvements was undertaken by the farmers themselves. Specialized skills such as electrical and welding were sub-contracted out.

With respect to potential new employment opportunities connected with expanded farm operation, the improvements in the surveyed projects basically enabled the farmer himself (and existing staff) to be more efficient. In general, there is a slight increase in work which first goes to existing staff and family before new positions are considered.

IMPACT AND CONTRIBUTION OF PART FOUR: SUPPORT SERVICES AND COMMUNITY DEVELOPMENT

In many rural areas and in several agricultural sectors, the infrastructure and facilities necessary for stability and increased agricultural activity are either non-existent, not easily accessible or are obsolete. Part Four has addressed this problem by committing $15.8 million in ARDSA funds to 142 different projects, resulting in an anticipated $66.0 million of improvements to rural services and processing industries. This includes:

- Development of several abattoirs to provide boxed beef to supermarkets and to small stores.
- Expansion of services offered to farmers, including veterinary clinics and livestock facilities.
- Creation of new product lines, such as seaweed specialties, fruit leathers, cottage wineries, jams and honey production, enzyme production and new product lines for the flour market.
- Replacement of imported products such as juices, blueberries and health foods.

Twenty projects have attempted to introduce a variety of agricultural services (vet clinics, feedlots, etc.) in rural areas while it is intended that 46 electrification projects and two other infrastructure projects will eventually impact 936 users and 448 farm units.

The major portion of Part Four funding (63%) has been related to secondary processing. Sixty-nine projects received assistance to pursue a wide range of expansion and modernization objectives, including the establishment of new businesses.

The 18 projects we surveyed have been successful in meeting their own specific objectives and those of Part Four. We observed new services to primary producers (most of which were being utilized), electrification projects which enhance the ability of current and new farmers to operate more economically and effectively in rural areas, and a variety of firms which have modernized, expanded or established new operations. New products have been developed, new markets are now being served, imports are being replaced, and the industry in general has been stabilized and made more viable by the projects we surveyed.

Based on our field work, this was also the only Part of ARDSA which has yet to create measurable numbers of new jobs. Based on our sample, we have some confidence in the Part Four projection that Part Four will create approximately 460 full-time equivalent jobs and save 300 jobs overall.

ARDSA'S OVERALL IMPACT ON VIABILITY

A major overall ARDSA objective is to improve the viability of existing industries to sustain growth by developing and supporting the agricultural sector and the food processing industry in rural regions. ARDSA has made a significant effort to achieve this objective for existing industries. For example:

- **Beef Industry**: This existing industry received considerable ARDSA support in an effort to improve its viability. For example, 32% of Part One's research and training funds ($1.5 million) were directed at this industry. Part Two ($13.0 million in ARDSA funds) was specifically aimed at the stabilization and support of the beef industry. With Part Two support, more than three million hectares of Crown Range are to be covered by improved resource management plans. The proposed physical improvements and reductions in resource use conflicts will affect more than 600 ranchers and ARDSA files indicate that such changes will eventually lead to an increase of more than 200,000 Animal Unit Months. A variety of Part Four projects were intended to improve the infrastructure for this industry through the provision of such needed support services as five vet clinics and five livestock handling facilities.

- **Food Processing Industry:** More than 60 different companies in the food processing industry have been able to improve their viability by expanding or modernizing with $9.8 million in committed ARDSA assistance.
- **Fruit and Vegetable Industry:** This industry also received considerable ARDSA support. For example, 21 projects and 21% of Part One's research funds ($1.1 million) were directed at this industry. In addition, nearly 30 different firms in this industry received Part Four assistance to expand or modernize their processing capability.
- **Farmers:** More than 390 different farms will have a better opportunity to improve their viability by now being able to introduce new irrigation and drainage works to more than 15,092 hectares of under-utilized or under-developed farm land. ARDSA anticipates that this will bring 980 hectares of new land into production and improve the production capability on another 4,770 hectares. This is an important potential impact, given that the increase in B.C. cultivated farmland from 1977 to 1981 was 44,516 hectares. In addition, ARDSA files anticipate that nearly 1,000 users, including 448 farms (or approximately 2% of the total number of farms in existence in B.C. in 1981), will eventually have improved electricity and water supply.

Another way to describe ARDSA's efforts to improve the viability of the existing industries is to examine the changes in the "physical plant" that will have taken place with ARDSA stimulation. These physical improvements cut across existing industries and the total investment costs include:

- $14.5 million worth of improvements to 3.3 million hectares of Crown Range. (This represents 35% of the 9.3 million hectares that were in B.C.'s Crown Range Reserves in 1977.)
- $13.6 million worth of off-farm irrigation and drainage infrastructure.
- $48.5 million worth of capital improvements (i.e. new or modernized processing plants) to food processing firms.
- $10.4 million worth of improvements to electrification and water works.

ARDSA has therefore made a significant effort to introduce those services, infrastructures, and capital improvements which could eventually improve the viability of existing industries to sustain growth. In terms of actual improvements to viability (as measured by actual increases in production, competitiveness, productivity, import replacements, etc.), it is still too early to make broad conclusions. The potential for improved viability is certainly there but measurable results cannot yet be identified nor fully attributed to ARDSA. For example:

- The results of Part One's research, training and marketing projects may not be realized for several years.
- Part Two improvements to Crown Range may require up to 60 years before they produce the desired results and affect the ranchers and the beef sector.
- In only a limited number of cases have farmers completed the on-farm introduction of irrigation and drainage works. Therefore, the potential exists for increased production of targetted crops but has not yet been realized.

- Many of the Part Four infrastructure services (eg: vet clinics, livestock handling facilities, electrification, etc.) have only been recently introduced or are still yet to be completed. As such, their potential impact on viability certainly exists but has not yet been felt to any significant degree.

The one area in which actual and measurable increases in viability have occurred is in Part Four's assistance to secondary processing and value-added industries. In the 11 projects we surveyed, we did observe actual increases in production, competitiveness, diversification, productivity and efficiency.

ARDSA'S OVERALL IMPACT ON EMPLOYMENT

ARDSA's second major objective is to expand employment and help save jobs in those existing aspects of the agriculture industry and food processing industry in B.C. which demonstrate production and market potential.

Here again ARDSA has helped to identify opportunities and to introduce improvements which could ultimately lead to better employment opportunities. However, as of December 31, 1981, ARDSA has had only limited success in meeting this objective. We could not identify any number of measurable jobs that had been created or saved as a result of the 28 completed projects we surveyed in Parts One, Two and Three. Indeed, employment creation receives only indirect attention when projects in these Parts are being considered and funded.

Part Four projects had some specific employment targets. Attempts at permanent job creation projects were not successful but the surveyed Part Four projects which modernized or otherwise assisted secondary processing firms were usually able to meet or exceed their employment goals. As previously mentioned, we have some confidence in the ARDSA forecast that Part Four will create 460 full-time equivalent jobs and save an additional 300 jobs.

OPPORTUNITIES FOR IMPROVED PERFORMANCE

There are significant opportunities to improve ARDSA's impact on B.C.'s agriculture industry and to increase assurances that "value-for-money" is received from the potential expenditure of $60 million in ARDSA funds. The opportunities for improved performance are in four major areas:

- timeliness;
- project application and approval process;
- cost efficiency of project expenditures; and
- monitoring and reporting of program results.

TIMELINESS

ARDSA was meant to be a "timely" program. It was to react quickly to requests for assistance. This has not happened. In a significant number of cases, the time required to evaluate, approve and complete ARDSA projects has been excessive. This has not only delayed the introduction of any potential ARDSA benefits into B.C.'s agricultural sector, but has damaged the credibility and acceptance of the program.

We recommend that senior program managers instill a greater sense of urgency in the whole application, approval and project implementation process. The importance to B.C.'s agricultural sector of timely projects needs to be stressed and progam managers' performance should be partly assessed based on their results in this area. The status of project applications and ongoing projects should be monitored and reported to the appropriate level of management on a routine basis. Clear accountability needs to be established to indentify the one person responsible for ensuring and reporting on the timely success and completion of every ARDSA project.

PROJECT APPLICATION AND APPROVAL PROCESS

Improvements are needed in this process to reduce its lengthy time requirements and to increase management's ability to approve and fund those projects which offer the greatest benefit to B.C.'s agriculture sector. For example, many proposed Part One projects have numerous unclear objectives, thus making it difficult for the decision-makers to assess exactly what such projects are to accomplish, especially in the near absence of any precise statements of project outputs. When outputs were stated they were usually either vague or led to incorrect expectations as to what would be produced.

In Part Two, we have limited faith in the ultimate accuracy of the projected streams of costs and benefits used in the application and approval process and doubt whether funding decisions were always made strictly on the basis of them in any case. There is a need to recognize that even though the cost-benefit and economic analyses conducted in Part Two can produce ratios and rates of return to the last decimal point, they are still crude instruments based on estimates and guesses of future results and cannot capture nor quantify all of the impacts of CRMP implementation. More sensitivity analysis is required along with an assessment of the likelihood of achieving the projected results.

In the Part Three approval process there appears to be little assessment of the market potential for those crops which were to be produced on the new or improved land. It also appears that many potentially worthwhile projects may be overlooked and never get to the application stage. Either the people with the problem cannot get together to define it; or if it is defined and reaches the feasibility stage it gets stopped because of overspecification of off-farm works (and higher than necessary cost estimates) or underestimation of potential benefits.

In Part Four, the instructions to potential applicants are not clearly understood and this results in time delays while the forms are explained and re-submitted. In addition, there are no standard formats for financial and project cost statements. This makes it difficult to analyze competing proposals for scarce ARDSA funds and hi the ability to measure results.

To help ensure the the "best" set of ARDSA projects are approved and funded, we have these recommendations:

- The objectives and expected outputs of proposed projects, especially in Part One, should be more clearly stated and defined so that decision-makers know what is to be funded.
- Proposals for Part One projects should consider the project's potential employment impact so that the project can be evaluated in terms of ARDSA's overall objectives.
- Use more sensitivity analysis when assessing the anticipated future results in Parts Two and Three.
- There is a need for more effective extension work in the area of irrigation and drainage to help farmers recognize the requirement for regional improvements and to appreciate the value of on-farm improvements.
- Assess the marketability of the crops produced on land improved by Part Three projects. For example, if all Part Three projects result in increased production of the same crop category, would there still be a market for that crop at the prices used in the benefit cost analysis.
- Part Three projects should be considered from the point of view of total water management, not just the point of view of the major easily identifiable aspect of not enough water or too much water.

- Expand and clarify the instructions given to potential applicants to cut down on the amount of time needed to understand and complete the applications.

- Provide standard formats for financial and project cost statements in Part Four, thus making it easier to analyze, interpret and measure results.

COST EFFICIENCY OF PROJECT EXPENDITURES

We did not conduct an "efficiency audit" nor did we observe any significant examples in which there was a lack of due regard for matters of economy and efficiency. However, there are a number of weaknesses which detract from ARDSA's overall ability to apply $60 million in ARDSA funds in the most efficient manner.

First, there are few standards or guidelines to clearly define what constitutes a cost-efficient expenditure. For example, there is little clear and meaningful direction on standards for Part Two fencing or Part Three irrigation and drainage works. As a result, a common concern voiced by many ARDSA participants and shared by ourselves is that certain projects and improvements could have been over-specified or over-designed.

Second, management's ability to monitor and control efficiency is weakened by the fact that the project outputs are sometimes poorly defined. In the absence of a clear definition of what is to be produced by a project, it is difficult to ensure cost-efficiency.

Third, and most importantly, there is little or no motivation for the agricultural sector to be cost efficient in some expenditures. This is most evident when contrasting the accountability in Part Two versus Part Three. In Part Three, participating farmers in the irrigation or drainage projects had to contribute, on average, 25% of the project's total costs. It is also clear that they would be responsible for certain maintenance costs.

As a result, these farmers had a vested interest in the scale, specifications, scope and cost-efficiency of projects. This situation contrasts with Part Two in which 10% of CRMP implementation costs were to be contributed by Range users. But there have been only sporadic attempts to collect these funds from users and there are no systems in place to monitor the status of this $2 million in potential "receivables". Such a situation lessens the motivation for Part Two participants to be cost efficient.

To resolve some of the above problems, we recommend that ARDSA management should:

- Establish clearer guidelines or standards for certain expenditures such as fencing and irrigation or drainage works.
- Clearly define the project's expected outputs and estimate the total true cost of the project.
- In Part Two, be more consistent in collecting the required contribution from the private sector to increase the motivation to be cost-efficient.

MONITORING AND REPORTING OF PROGRAM RESULTS

Although ARDSA has been in existence for nearly five years and its expenditures now exceed $32 million, there is little if any data on the program's actual impact. Nor does there appear to have been any efforts or systems in place to obtain or report such data on a routine basis. As a result, there is a limited data base to evaluate ongoing and competing requests for assistance, to design future initiatives, and to know whether value for money has been received from these sizeable expenditures.

It is essential for program managers and senior management to know on a regular basis what is actually happening, versus what could potentially happen, as a result of ARDSA. Only then can they measure the cost-efficiency of project expenditures, the extent to which value for money is being received, and whether certain proposed projects are likely to succeed or fail. Only with such information can they properly design ARDSA-type initiatives for the future.

To help address this vacuum of information about ARDSA, we recommend that:

- Every ARDSA project, before it is funded, should have an agreed-upon evaluation mechanism built into it. This would state how the project would be evaluated, using what indicators, and by what independent person or agency.
- At an agreed-upon time, after the termination of the project, conduct the previously agreed-upon evaluation. The time required for such an independent evaluation should vary with the size and complexity of the project. For example, it could be as straight forward as contacting the people who requested the project to see if the project's objectives have been met and if they are satisfied. (In our current evaluation of ARDSA we reviewed 47 projects. The average time required to review the file, contact project participants, compare actual results to expected results, and document our findings was two man-days.)
- The data from such evaluations should be aggregated and reported so that the program's overall performance is known.

APPENDIX A

SUMMARY TABLES RELATING TO THE ARDSA EVALUATION

APPENDIX A

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TABLE 1

FINANCIAL STATUS OF ARDSA ON DECEMBER 31, 1981

		Commitments to Date						
Part	Number of Approved Projects	BCMAF (millions)	DREE (millions)	Total Government (millions)	% of Total	Local Share (millions)	Total Investment (millions)	Shareable Expenditures to Date (millions)
One	57	$ 2.4	$ 2.4	$ 4.8	11.1%	$ .7	$ 5.5	$ 4.0
Two	87	6.5	6.5	13.0	29.8	1.5	14.5	9.7
Three	32	5.0	5.0	10.0	22.9	3.5	13.5	6.6
Four	142	7.9	7.9	15.8	36.2	50.1	66.0	11.7
TOTAL	318	$21.9	$21.9	$43.8	100.0%	$55.8	$99.6	$32.0

Source: ARDSA Financial Statement, December 31, 1981

NOTE: Figures may not add exactly due to rounding.

TABLE 2

ARDSA PROJECTS INCLUDED IN THE FIELD SURVEY

Part One	Part Two	Part Three	Part Four
1. Swine Industry Study (Project Number 271009)	1. Yahk Range Unit CRMP (271073)	1. Farleigh Lake #1 (271003)	1. S. Spetifore & Sons Ltd. (271233)
2. Mobile Farm Management Clinic (271011)	2. Dutch Findlay Range Unit CRMP (271060)	2. Farleigh Lake #2 (271003)	2. Kootenay Veterinary Clinic (271236)
3. Fruit Dehydrator (271034)	3. Grasmere Range Unit CRMP (271082)	3. Basque Vineyards (271113)	3. Milligan Creek Power (271206)
4. Hydrocooling of Cherries (271037)	4. Kettle Valley South-Rock Mountain Range Unit CRMP (271079)	4. St. Mary's Prairie (271108)	4. Sumas Prairie Water Supply (271297)
5. Mushroom Compost Replacement Demonstration (271044)	5. Old Timer's Mountain CRMP (271097)	5. Oliver #18 (271101)	5. South Buick Extension (271671)
6. Regional Development Plans (271024)	6. Tremont Creek CRMP (271053)	6. Upper Deep Creek (271004)	6. Big Creek Community Power (271219)
7. Beef Industry Study (271035)	7. Beaverdam Range Unit CRMP (271052)	7. Kent-Hammersley (271101)	7. B.C. Coast Vegetable Co-op Association (271200)
8. Planning Assistance to Part Three (271013)	8. Parker-Felker-Onward Range Unit Range-Development Plan (271066)		8. J & L Meats Company Ltd. (271249)
9. Planning Assistance to Part Four (271014)	9. Wren Community Pasture (271420)		9. Sun Rype Products Ltd. I (271249)
10. Financial Management Training-Beef Producers (271029)	10. Sunset Prairie Community (271090)		10. Sun Rype Products Ltd. II (271665)

Table 2 continued

Part One	Part Two	Part Three	Part Four
11. ARDSA Program Evaluation Phase One (271309)			11. Pan-Ready Poultry Ltd. (Sooke) (271299)
			12. Merryfield Cattle Co. Ltd. (271661)
			13. Vernon Fruit Union (271280)
			14. Okanagan Dried Fruits Ltd. (271296)
			15. Fraser Valley Mushroom Growers (271256)
			16. Western Protein Food Corp. (271242)
			17. East Chilliwack Agricultural Co-op (271664)
			18. Forest Stand Improvement Project (271281)

Note: An additional Part Four project was examined. The Public Information Project (271006) provided support to all four Parts and is discussed separately in Chapter Eight.

TABLE 3

DIVERSIFICATION OF PART ONE PROJECTS BY COMMODITY

Commodity	Number of Part One Projects Approved	% of Total Part One Funds
Beef	8	32%
Vegetable	11	15
Fruit	10	9
Honey	1	4
Seafood	2	2
Grain	1	2
Swine	1	1
Farmers in General	2	1
Sheep	1	1
Chicken	1	1
Rabbit	1	Less Than .5
Other projects not specific to any particular commodity (eg: program evaluation)	18	31
	57	100%

TABLE 4

DIVERSIFICATION OF PART ONE PROJECTS BY REGIONAL DISTRICT

Regional District	Number of Approved Part One Projects	% of Total Part One Funds
Bulkley-Nechako	2	3.9%
Capital	6	2.6
Cariboo	1	1.4
Central Okanagan	2	3.2
Fraser-Cheam	2	1.5
Greater Vancouver	1	1.0
Okanagan-Similkameen	5	4.9
Peace River-Laird	1	2.1
Powell River	1	-
Thompson-Nicola	2	3.5
Not Applicable to a Specific Regional District	34	76.0
	57	100.0%

TABLE 5

SPATIAL DIVERSIFICATION OF PART TWO PROJECTS

Regional District	Number of Approved Part Two Projects	% of Total Part Two Funds
Bulkley-Nechako	5	9.9%
Cariboo	17	17.1
Central Kootenay	1	.5
Central Okanagan	1	2.2
Columbia Shuswap	3	1.9
Comox-Strathcona	1	.3
East Kootenay	10	5.0
Fraser-Fort George	1	1.6
Kitimat-Stikine	1	.7
Kootenay Boundary	12	5.5
North Okanagan	2	1.1
Okanagan-Similkameen	8	16.1
Peace River-Laird	6	17.1
Thompson-Nicola	15	17.5
Not Applicable to a Specific Regional District	4	3.7
	87	100.0%

TABLE 6

INVOLVEMENT AND EDUCATIONAL BENEFITS (of sampled Part Two Projects)

Sampled Project	No. of Ranchers	Min. of Agr. & Foo	Min. of Forests	Min. of Lands	Min. of Env.	Forest	Other	Education Benefits
1. Yahk Range Unit	5	Yes	Range Br. Timber Br.	Land Mgt. Br.	Fish and Wildlife Br.	Crestbrook Forest Industries	No	Highly regarded; seen as an opportunity to learn practical range management.
2. Dutch-Findlay Range Unit	2	Yes	Timber Br. Range Br.	Land Mgt. Br.	Fish and Wildlife Br.	Crestbrook Forest Industries	ELUC Secretariat	Some benefits due to reducing open confrontations; spirit of integration appears lacking.
3. Grasmere Range Unit	12	Yes	Range Br. Timber Br.	Land Mgt. Br.	Fish and Wildlife Br.	No	No	Not applicable.
4. Kettle Valley South-Rock Mountain Range Unit	4	Yes	Range Br.	No	Fish and Wildlife Br.	Pope and Talbot Ltd.	No	Regarded as a positive continuing educational opportunity.
5. Old Timer's Mountain	3	No	Range Br.	Land Mgt. Br. Parks Br.	Water Mgt. Fish and Wildlife Br.	No	Okanagan-Similkameen Parks Soc.; South Okanagan Sportsman's Assoc.; South Okanagan Naturalists Club; Reg. Dist. of Okanagan-Similkameen	All felt positive about educational benefits and increased communication opportunity

TABLE 6
(Continued)

	Sampled Project	No. of Ranchers	Min. of Agr. & Food	Min. of Forests	Min. of Lands	Min. of Env.	Industry	Other	Education Bene
6.	Tremont Creek	1	Yes	Range Br. Timber Br.	No	Fish and Wildlife Br.	Evans Products	No	Limited to ini plan preparati little evidenc that further multidisciplin communication takes place.
7.	Beaverdan Range Unit	3	Yes	Range Br. Timber Br.	No	Fish and Wildlife Br.	Ainsworth Lumber Co. Ltd.	No	No evidence of benefit becaus of rapid user turnover.
8.	Parker-Felker-Onward Range Unit	3	Yes	Range Br. Timber Br.	No	Fish and Wildlife Br.	No	No	Few direct benefits obser
9.	Wren Community Pasture	25	Yes	Yes	Yes	Yes	No	No	Some benefits primarily limi to specific problem solvin
10.	Sunset Prairie	35	Yes	Range Br.	No	Fish and Wildlife Br.	No	No	Limited to specific probl solving.

TABLE 7

IMPACT OF PART TWO ON GRAZING AND FORAGE IN THE SAMPLED PROJECTS

CRMP	Projected Change in AUM's due to Implementation of Plan			Did Appropriate Data Exist for Actual Results?	Did Participants Consider Projections Realistic?	Comments
	Saved	Created	Other Changes			
1. Yahk Range Unit	882	1,068	No extension of season; 10% AUM increases were allowed on the Range Permit for 1979 and again in 1982.	No	No They were regarded as skeptical.	The Ministry of Forests estimated a loss of 240 AUM's by 1983 if CRMP had not been implemented.
2. Dutch Findlay	1,250	X	X	No	Yes	No increases permitted to date.
3. Grasmere Range Unit	834	565	1,119 from extended seasons.	No	Yes	50% of livestock from Range Unit grazed on government-owned Steeples Ranch Pasture.
4. Kettle Valley	114	61-111	X	No	Yes	No increases in permits.
5. Old Timer's Mountain	1,203	1,236	5% AUM increase allowed on range tenure by Ministry of Forests.	No	Yes	5% AUM increase allowed on range tenure by Ministry of Forests.
6. Tremont Creek	172	280	X	No	Yes	$4,900 in feed cost saved due to longer season with the CRMP.

Table 7 Continued

CRMP	Projected Change in AUM's due to Implementation of Plan: Saved	Created	Other Changes	Did Appropriate Data Exist for Actual Results?	Did Participants Consider Projections Realistic?	Comments
7. Beaverdam Range	X	573	1,515 Through extended season.	No	No	Participants believe that considerable new AUM's have been created but not allocated because of rapid turnover in ranchers and administrative staff.
8. Parker-Felker-Onward Range Unit	X	840	X	Yes	Yes	All users have received increase in AUM's through permits Total: 667 AUM's.
9. Wren Community	X	3,000	X	No	Yes	Decrease to 400 AUM's by the year 2000 estimated on the area to be improved due to forest succession.
10. Sunset Pasture	X	5,840- 7,177	X	No	Yes	The projected carrying capacity is 17,000 AUM's.

TABLE 8

DIVERSIFICATION OF PART THREE PROJECTS BY REGIONAL DISTRICT

Regional District	Number of Approved Part Three Projects	% of Total Part Three Funds
Capital	1	1.5%
Cariboo	1	3.9
Cent. Fraser Valley	2	2.0
Central Kootenay	1	1.3
Central Okanagan	2	.5
Dewdney-Alouette	2	3.4
East Kootenay	1	3.7
Fraser-Cheam	2	14.1
Greater Vancouver	2	8.9
North Okanagan	2	6.3
Okanagan-Similkameen	3	17.3
Squamish-Lillooet	1	23.9
Thompson-Nicola	10	10.3
Not Applicable to a Specific Regional District	2	3.0
	32	100.0%

TABLE 9

SUMMARY OF OBSERVED OFF-FARM WORKS AND ON-FARM IMPACTS (Part Three)

Project	Type of Works Introduced	Size of Farm Units Affected	Number of Farms Affected	Amount of Improved Farm Land
Irrigation:				
Farleigh Lake #1 & #2	Buried 4" gravity line making domestic water available to nine properties (not all with hook up)	4.2 hectares	1	4.2 hectares
Basque Vineyards	7 pumps (105 Hp pump capacity), 8" main	41.7 hectares	4 (one additional farm hook up in the future)	41.7 hectares
St. Mary's	2 pumps (600 Hp pump capacity); 14" through 8" mainline	208.3 hectares	6	208.3 hectares
Drainage:				
Oliver #18	An interceptor under-drain	20.8 hectares	10 (some domestic water is tapped off the drain line)	20.3 hectares
Deep Creek	A single collector open ditch	83.3 hectares	3	83.3 hectares
Kent-Hammersley	Three ditches and five branches	416.7 hectares	Still being determined	Approximately 83.3 hectares

DIVERSIFICATION OF PART FOUR PROJECTS BY REGIONAL DISTRICT

Regional District	Number of Approved Part Four Projects	% of Total Part Four Funds
Alberni-Clayoquot	1	2.7%
Bulkley-Nechako	5	1.1
Capital	2	4.6
Cariboo	15	4.8
Cent. Fraser Valley	15	23.7
Central Kootenay	2	.7
Central Okanagan	7	9.4
Columbia Shuswap	1	.1
Comox-Strathcona	2	1.0
Cowichan Valley	1	-
Dewdney-Alouette	5	1.7
East Kootenay	3	.9
Fraser-Cheam	4	5.9
Fraser-Fort George	2	.4
Greater Vancouver	12	12.5
Kitimat-Stikine	1	.1
Mount Waddington	1	.2
Nanaimo	2	1.7
North Okanagan	7	6.0
Okanagan-Similkameen	14	11.3
Peace River-Liard	16	3.9
Skeena-Queen Charl.	1	2.0
Squamish-Lillooet	1	.2
Sunshine Coast	1	.2
Thompson-Nicola	14	3.2
Not Applicable to a Specific Regional District	2	2.0
	142	100.0%

TABLE 11

SECTORAL DIVERSIFICATION OF PART FOUR PROJECTS

Sector	Number of Approved Part Four Projects	% of Total Part Four Funds
Logging	1	.2%
Highway, Bridge and Street Construction	1	.2
Dairy Products Industry	1	.3
Forestry Services	2	.8
Beverage Industries	3	2.0
Grain Elevators	1	2.0
Bakery Products Industries	1	2.0
Flour and Breakfast Cereal Products Industries	1	3.0
Feed Industry	6	4.2
Fish Products Industry	10	10.0
Electric Power	46	10.7
Meat and Poultry Products Industries	14	12.0
Water Systems	4	15.9
Fruit and Vegetable Processing Industries	28	30.8
Services Incidental to Agriculture	17	4.7
Public Information	1	1.7
	142	100.0%

TABLE 12

EXAMPLES OF IMPROVED VIABILITY ARISING FROM PART FOUR PROJECTS

Project Name	Project Description	Increased Production	Markets	Productivity	Competitiveness	Other Impacts on Viability
1. Western Protein Food Co-op	New de-boning plant	130,000 pounds per week (the projected figure was 50,000)	New secondary processing; new export markets in Japan and South Africa	Output per employee higher than expected	New products on the market	Considering second expansion; helps chicken growers
2. Fraser Valley Mushroom Growers Co-op	New canning plant	20 million pounds per year (the projected figure was 14 million)	Replaces imports; provides canned mushrooms	Five fold increase in productivity per employee	Purchased the "Money's" brand name	Supports growers who can produce more; reduces cyclical swings
3. East Chilliwack Agricultural Co-op	New plant for fruits, juices and cole crops	The forecast for 1982 is 8 million pounds	New export markets for IQF blueberries, strawberries and juices	Can now use plant for cole crops in off season	Purchased a new brand	Provides stability for farmers; more grades can be sold; more acreage can be in production
4. S. Spetifore & Sons	Convert existing plant into IQF fish processing	New production	Replaces imports from U.S.	Can now service fishermen in off hours	Quicker turnaround; Canadian products more competitive	Improved quality; benefited 50-100 fishermen
5. B.C. Coast Vegetable Co.	Expand processing plant; new equipment	52,000 tons in 1981 (the projected figure was 90,000 tons; it was a poor crop year)	Entered into Japanese market and some Alberta markets	Reduced overtime; increased capacity in peak periods	Kept prices competitive	Improved product quality; slowed price increases
6. Okanagan Dried Fruits	Equipment to produce fruit leathers	30 cases per day (the projected figure was 25)	Could enter U.S. market	New plant	New product to compete with imports	Cull fruits can now be used

TABLE 13

DIVERSIFICATION OF TOTAL ARDSA PROJECTS BY REGIONAL DISTRICT

Regional District	Number of Approved ARDSA Projects	% of Total ARDSA Funds
Alberni-Clayoquot	1	.9%
Bulkley-Nechako	12	3.9
Capital	9	2.2
Cariboo	34	8.0
Cent. Fraser Valley	17	8.6
Central Kootenay	4	.7
Central Okanagan	12	4.4
Columbia Shuswap	4	.6
Comox-Strathcona	3	.5
Cowichan Valley	1	–
Dewdney-Alouette	7	1.4
East Kootenay	14	2.8
Fraser-Cheam	8	5.5
Fraser-Fort George	3	.6
Greater Vancouver	15	6.5
Kitimat-Stikine	2	.3
Kootenay Boundary	12	1.7
Nanaimo	2	.6
North Okanagan	11	3.9
Okanagan-Similkameen	30	13.5
Peace River-Liard	23	6.8
Powell River	1	–
Skeena-Queen Charl.	1	.7
Squamish-Lillooet	2	5.8
Sunshine Coast	1	.1
Thompson-Nicola	41	9.3
Not Applicable to a Specific Regional District	48	11.0
	318	100.0%

APPENDIX B

OVERVIEW OF ALL ARDSA PROJECTS

Note: This Appendix contains a listing of all ARDSA projects as of December 31, 1981. It "characterizes" each project by its name, total project costs, the costs eligible for assistance, the costs committed by DREE and the Province and the Committed costs of the private sector or the local community. The expected results, as determined in the project proposals, are indicated when they were available in DREE's B.C. Implementation System. Projects with which the Project Team had a prior involvement were excluded from the field survey and are indicated by an asterisk.

82/05/14

BRITISH COLUMBIA IMPLEMENTATION SYSTEM

OVERVIEW OF ARDSA PART 1 PROJECTS
RESEARCH, PLANNING, PROMOTION
DECEMBER 31, 1981

PROJECT NUMBER	PROJECT NAME	LOCATION	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE	OUTPUT/OBJECTIVE
RESEARCH, PLANNING, PROMOTION								
APPL. RESEARCH STUD MKT. DEVEL & PILOT DEM								
271002	FRUIT AND VEGETABLE COLOR AND	OKANAGAN VALLEY	160,000	160,000	60,000	60,000	40,000	Develop a test new sorter machine
271007	SWINE INDUSTRY STUDY	BC	60,000	60,000	30,000	30,000		Identify opportunities; Plan
271008	RANGELAND SEEDER EVALUATION	KAMLOOPS	109,660	109,660	54,830	54,830		Evaluate this technology
~~271011~~	~~MOBILE FARM MANAGEMENT CLINIC~~	BC	46,000	46,000	23,000	23,000		Test new training tools
271012	NARAMATA AND LAKE AREA STUDY	NARAMATA	55,000	55,000	20,625	20,625	13,750	Identify better handling methods
271015	RANGE RENOVATION EQUIPMENT ...	INTERIOR B.C.	788,840	788,840	394,420	394,420		Demonstrate new equipment
271026	ACCELERATED GRAPE CERTIFICATIO	SIDNEY	26,212	26,212	13,106	13,106		Develop facilities for virus free stock
271030	TOMATO HARVESTING STRATEGY	WHITE ROCK/VICT	3,426	3,426	1,713	1,713		Develop harvesting strategy
271032	MAXAN LAKE RESEARCH PROJECT	BURNS LAKE-32KW	9,752	9,752	4,876	4,876		Soil & forage sample analysis
~~271034~~	~~FRUIT DEHYDRATOR~~	KALEDEN	15,186	15,186	4,639	4,639	5,908	Test a new technology
271036	FRASER VALLEY IRRIGATION DESIG	LOWER FRASER VA	44,964	44,964	22,482	22,482		Determine irrigation requirements
271037	HYDROCOOLING OF CHERRIES	SUMMERLAND	86,360	86,360	12,847	12,847	60,666	Test existing technology
271038	PEACE RIVER COMMUNITY PASTURE	OMINECA-PEACE	174,000	74,000	87,000	87,000		Demonstrate new methods & techniques
271039	RABBIT INDUSTRY STATUS & OPP.	B.C.	8,100	8,100	4,050	4,050		Opportunities in this industry
271040	TISSUE CULTURE PROPAGATION	KELOWNA	126,600	126,600	15,825	15,825	94,950	Test a technology
~~271042~~	~~SHELLFISH CULSH & REARING TRAY~~	POWELL RIVER NR	0		0	0		Test a technology
271044	MUSHROOM COMPOST REPLACEMENT	LOWER MAINLAND	26,300	26,300	13,150	13,150		Demonstrate commercial viability
271045	ENHANCED STORAGE & SALE-VEGET.	AGASSIZ	179,000	179,000	87,500	87,500		Demonstrate new technology
271046	MECHANICAL SHEEP FEEDING	SOOKE	0		0	0		Develop & test a technology
271047	SHEEP PRODUCTION TECH TRANSFER	SALMON ARM	54,700	54,700	27,350	27,350		Test a technology
271048	BIOLOGICAL CONTROL AGENTS	BC	99,000	99,000	49,500	49,500		Establish a new program
271049	NUTRIENT FILM LETTUCE PROD	PITT MEADOWS	39,200	39,200	19,600	19,600		Test commercial viability
271300	PILOT PROJECT-SAWDUST BED STRA	SAANICH	30,678	30,678	15,339	15,339		Demonstrate commercial viability
271301	BCFGA VARIETY TESTING ORCHARD	OLIVER	236,600	236,600	59,150	59,150	118,300	a demonstration facility
271302	PACIFIC TRIDENT FISHING CO.LTD	VICTORIA	125,900	125,900	25,000	25,000	75,900	Demonstrate commercial viability
271303	BROILER INDUSTRY DEMON.CENTRE	AGASSIZ	110,000	110,000	26,500	26,500	57,000	a demonstration facility
271306	ZERO-TILLAGE DEMONSTRATION	PEACE RIVER ARE	99,999	99,999	50,000	50,000		Demonstrate technology
~~271307~~	~~LONGLINE OYSTER CULTURE AND CA~~	COASTAL B.C.	259,250		30,000	30,000	79,250	Demonstrate viability
271310	VIRUS FREE SEED POTATO PRODUCT	CARIBOO REGION	43,000	43,000	10,750	10,750	21,500	Demonstrate technology
271311	BC HONEYBEE STOCK IMPROVEMENT	POWELL R/VERNON	184,340	184,340	89,456	69,456	5,428	Create a new industry
TOTAL SUBPROGRAM			3,202,067	2,842,817	1,254,708	1,254,708	572,652	
SUB-PROGRAM PROJECT COUNT	30							
LONG RANGE AGRI. PLANNING								
271022	ARDSA ORGANIZATION STUDY	VICTORIA	20,000	20,000	10,000	10,000		Review systems & organization
~~271024~~	~~REGIONAL DEVELOPMENT PLANS~~	BC	115,000	115,000	57,500	57,500		Regional plans, Profiles
271025	POLICY ANALYSIS OF BEEF IND.	BC	30,000	30,000	15,000	15,000		Simulation model
271027	GOALS FOR B.C. AGRICULTURE	B.C.	13,000	13,000	6,500	6,500		Framework for policy development
271028	MARKETING OPPORTUNITY IDENT.	B.C.	120,000	120,000	45,000	45,000	30,000	Identify opportunities
271031	AGRICULTURAL LAND INVENTORY...	B.C.	18,992	18,992	9,496	9,496		Inventory of land
271035	BEEF INDUSTRY STUDY-PHASE II	BC	50,000	50,000	25,000	25,000		Intensification plan
~~271304~~	~~B. C. FOOD SYSTEM STATISTICS~~	B.C.	23,600	23,600	11,800	11,800		Produce comprehensive statistics
271308	ARDSA EVALUATION TERMS OF REFE	B.C.	10,000	10,000	5,000	5,000		Terms of Reference for evaluation

OVERVIEW OF ARDSA PART 1 PROJECTS
RESEARCH,PLANNING,PROMOTION
DECEMBER 31, 1981

PROJECT NUMBER	PROJECT NAME	LOCATION	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE	
271312	INPUT-OUTPUT MODEL FOR BC AGR	BC	34,800	34,800	17,400	17,400		Input-Output model
	TOTAL SUBPROGRAM		435,392	435,392	202,696	202,696	30,000	
	SUB-PROGRAM PROJECT COUNT 10							
	PROJ. FEAS. & EVALUATION							
271013	PLANNING ASSISTANCE	BC	250,000	250,000	125,000	125,000		Feasibility studies for Part Three
271014	EVALUATION ASSISTANCE	VICTORIA	220,000	220,000	110,000	110,000		Feasibility studies for Part Four
271016	SAANICH PENINSULA IRRIGATION	SAANICH PENINSU	10,254	10,254	5,127	5,127		Irrigation requirements
271017	ENGINEERING STUDY, DISTRICT OF	AGASSIZ	18,250	18,250	9,125	9,125		Feasibility study
271018	PROJECT EVALUATION	B.C.	264	264	132	132		Evaluation procedures for CRMP
271019	PEMBERTON-ECON FEAS. STUDY	PEMBERTON	67,980	67,980	33,990	33,990		Feasibility study
*271020	WESTERN AGRICULTURAL SOCIETY	LOWER MAINLAND	32,200	32,200	16,100	16,100		Feasibility study
271021	FENCEPOST FEASIBILITY STUDY	BC	17,100	17,100	8,550	8,550		Feasibility study
271023	PLANNING ASSISTANCE	BC	400,000	400,000	200,000	200,000		Assistance to Part Three
271033	VANCOVER PRODUCE TERMINAL MKT	VANCOVER	25,940	25,940	12,970	12,970		Feasibility study
271043	CHINESE MUSHROOMS FEASIBILITY	VI/L.MAINLAND	19,842	19,842	9,921	9,921		Feasibility study
271305	SIMILKAMEEN INDIAN BAND ECONOM	SIMILKAMEEN I.R	35,600	35,600	17,800	17,800		Feasibility study
271309	ARDSA PROGRAM EVALUATION PHASE	B.C.	19,300	19,300	9,650	9,650		A base for the entire evaluation
*271313	ARDSA EVALUATION-PHASE II	BC	100,000	100,000	50,000	50,000		The evaluation of ARDSA
	TOTAL SUBPROGRAM		1,216,730	1,216,730	608,365	608,365		
	SUB-PROGRAM PROJECT COUNT 14							
	MANAGERIAL TRAINING							
271005	GROUP COUNSELLING AND INFORMAL	VARIOUS B.C.	50,000	50,000	25,000	25,000		Deliver rural training
271029	FINANCIAL MANAGEMENT TRAINING	INTERIOR B.C.	17,322	17,322	8,661	8,661		Develop a deliver course to Beef industry
271041	FINANCIAL MANAGEMENT TRAINING	B.C.	524,400	524,400	262,200	262,200		Deliver training to commodity groups
	TOTAL SUBPROGRAM		591,722	591,722	295,861	295,861		
	SUB-PROGRAM PROJECT COUNT 3							
	TOTAL PROGRAM		5,445,911	5,086,661	2,361,630	2,361,630	602,652	
	PROGRAM PROJECT COUNT 57							

BRITISH COLUMBIA IMPLEMENTATION SYSTEM

OVERVIEW OF ARDSA PART 2 PROJECTS
CO-ORDINATED RESOURCE MANAGEMENT PROGRAM
DECEMBER 31, 1981

PROJECT NUMBER	PROJECT NAME	EXPECTED HECTARES COVERED	EXPECTED NO. OF RANCHERS	EXPECTED AUM'S CREATED	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE
COORDINATED RESOURCE MGT									
CO-ORDINATED RESOURCE MGMT.									
271051	TATLA LAKE RANGE UNIT	109449	2	2736	125,000	125,000	56,250	56,250	12,500
271052	BEAVERDAM RANGE UNIT	44111	3	2800	485,880	485,880	218,646	218,646	48,588
271053	TREMONT CREEK RANGE UNIT	4049	1	452	94,946	94,946	42,726	42,726	9,494
271054	NICKEL PLATE RANGE UNIT	40469	8	5500	494,990	494,990	222,745	222,745	49,500
271055	PINANTAN - LOLO RANGE UNIT	43301	5	4285	258,725	258,725	116,426	116,426	25,873
271056	SKULL MOUNTAIN-WILLOWGROUSE RA	48988	6	1905	211,276	211,276	95,074	95,074	21,128
271057	HARRIS CREEK RANGE UNIT	42897	2	516	74,815	64,815	29,167	29,167	7,481
271058	SKOOKUMCHUCK-FINDLAY RANGE UN.	3210	1	348	2,043	2,043	919	919	205
271059	ALKALI LAKES RANGE UNIT	8903	3	1500	21,371	21,371	9,617	9,617	2,137
271060	DUTCH FINDLAY RANGE UNIT	8215	2	2824	73,352	73,352	33,009	33,009	7,334
271061	KORI RANGE UNIT	1750	10	5361	496,253	352,750	158,738	158,738	49,625
271062	ALEXANDRIA RANGE UNIT	16592	6	828	37,464	10,417	4,688	4,688	3,746
271064	ALMOND CREEK RANGE UNIT	8903	1	190	45,040	45,040	20,268	20,268	4,504
271065	ANARCHIST-SIDLEY-MCKINNEY CREE	18211	7	1100	157,000	157,000	70,650	70,650	15,700
271066	PARKER - FELKER - ONWARD RANGE	24881	3	840	102,882	102,882	46,297	46,297	10,288
271067	GISCOME COMMUNITY PASTURE	1701	5	3400	329,640	225,900	101,655	101,655	32,964
271068	JOHNSON-JAMES CREEK	14146	7	1836	251,682	48,827	21,972	21,972	25,168
271069	BEATTON-DOIG COMMUNITY PASTURE	11534	21	8088	649,536	93,050	41,873	41,873	64,952
271070	NICHOLSON - INGRAM CREEK RANGE	18281	9	3500	258,464	126,656	56,995	56,995	25,846
271071	PHOENIX RANGE UNIT	7689	4	1226	133,877	43,877	19,745	19,745	13,387
271072	PECKHAMS LAKE	7853	8	3855	232,172	12,171	5,477	5,477	23,217
271073	YAHK RANGE UNIT	32780	5	1950	125,380	125,380	56,420	56,420	12,540
271074	HALLIS LAKE COMMUNITY PASTURE	2833	14	3609	399,470	49,470	22,260	22,260	39,950
271075	BURRELL COORDINATED PLAN	30756	2	485	69,500	69,500	31,275	31,275	6,950
271076	TORONTO COORDINATED PLAN	1821	1	149	20,500	20,500	9,225	9,225	2,050
271077	PERRY CREEK - PATTONS LAKE RAN	34398	2	1526	65,000	65,000	29,250	29,250	6,500
271078	PEAVINE RANGE UNIT	11264	1	700	27,020	27,020	12,159	12,159	2,702
271079	KETTLE VALLEY-ROCK MOUNTAIN C.	3484	4	359	58,500	58,500	26,325	26,325	5,850
271080	ONE EYE LAKE SPRING PASTURE	182	4	350	125,000	125,000	56,250	56,250	12,500
271081	FRENCH BAR COORDINATED PLAN	66774	2	678	139,000	139,000	62,550	62,550	13,900
271082	EAST KOOTENAY RANGE IMPROVEMEN	77377	66	0.	2,130,258	152,250	68,513	68,513	213,024
271083	MARTIN MOUNTAIN C.R.M.P.	10522	6	651	205,440	205,440	92,448	92,448	20,544
271084	TOD MOUNTAIN C.R.M.P.	30190	8	1365	146,420	146,420	65,889	65,889	14,642
271085	WEGER MOUNTAIN C.R.M.P.	22986	7	577	102,750	102,750	46,238	46,238	10,274
271086	NORTH BONAPARTE C.R.M.P.	60471	12	2250	393,180	393,180	176,931	176,931	39,318
271087	MELDRUM CREEK STOCK RANGE	36422	5	2065	180,345	180,345	81,155	81,155	18,035
271088	BIG CREEK STOCK RANGE	368271	9	2933	353,320	353,320	158,994	158,994	35,332
271089	SHINGLE CREEK RANGE UNIT	20234	1	2320	178,686	58,328	26,248	26,248	17,869
271090	SUNSET PRAIRIE EXPANSION	12545	35	15100	523,610	373,990	168,295	168,295	52,362
271091	BECHER PRAIRIE CRMP	124370	4	2655	136,467	56,816	25,567	25,567	13,647
271092	GASPARD - GASPARD ALPINE	224915	1	21662	207,083	62,560	28,152	28,152	20,708
271093	ERIC (HORSEFLY STOCK RANGE)	12140	3	960	73,500	40,000	18,000	18,000	7,350
271094	NIQUIDET HORSEFLY STOCK RANGE	12222	4	1355	61,932	9,200	4,140	4,140	6,193
271095	WEST LAC LA HACHE	45587	7	2434	330,990	330,990	148,946	148,946	33,098
271096	PENTICTON/VASEUX CREEK	71468	4	2634	407,408	206,997	93,149	93,149	40,740
271097	OLDTIMER'S MOUNTAIN	10518	4	2440	279,861	104,609	47,074	47,074	27,986
271098	SABISTON CREEK	12141	2	850	134,318	134,318	60,443	60,443	13,432

OVERVIEW OF ARDSA PART 2 PROJECTS
CO-ORDINATED RESOURCE MANAGEMENT PROGRAM
DECEMBER 31, 1981

PROJECT NUMBER	PROJECT NAME	EXPECTED HECTARS COVERED	EXPECTED NO. OF RANCHERS	EXPECTED AUM'S CREATED	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE
271099	MCGREGOR (SIX MILE) CREEK	31982	4	955	138,272	87,659	39,447	39,447	13,826
271401	MT. MCLENNAN	10190	6	451	73,698	30,550	13,748	13,748	7,370
271402	BLEEKER LAKE	10249	1	725	121,367	12,987	5,844	5,844	12,137
271403	FOREST LAKE	51345	7	846	104,378	21,268	9,571	9,571	10,437
271404	D'ARCY MOUNTAIN	32780	4	1018	167,200	167,200	75,240	75,240	16,720
271405	SEATON CRMP	7891	3	3000	112,607	98,475	44,314	44,314	11,260
271406	WHITES LANDING COMMUNITY PAST	12141	25	5048	299,381	41,392	18,626	18,626	29,938
271407	FISHERMAN - HARDY CRMP	3804	2	250	41,600	41,600	18,720	18,720	4,160
271409	DOG CREEK PASTURE IMPROVEMENT	3846	6	675	58,800	58,800	26,460	26,460	5,880
271410	BIG BAR - HIGH BAR CRMP	26920	5	1072	207,600	207,600	93,420	93,420	20,760
271411	BADGER CREEK CRMP	16963	11	1435	222,411	95,600	43,020	43,020	22,241
271412	PROMONTORY	22258	4	1071	189,900	189,900	85,455	85,455	18,990
271413	STEAMBOAT CRMP	32205	7	1409	118,221	59,000	26,550	26,550	11,822
271414	CHIPKA-ROCKY/TEE PEE-PLUMBOB	14164	3	1768	187,538	187,538	84,392	84,392	18,754
271415	EDNEY CRMP	14569	2	1320	114,242	114,242	51,409	51,409	11,424
271416	CECIL LAKE CRMP	34500	28	675	469,421	36,300	16,335	16,335	46,942
271417	FLY HILLS CRMP	6151	13	626	40,000	40,000	18,000	18,000	4,000
271418	SUMMERLAND - PEACHLAND CRMP	120499	5	7858	570,200	570,200	256,590	256,590	57,020
271419	INKAMEEP CRMP	52043	5	3635	417,200	417,200	187,740	187,740	41,720
271420	WREN COMMUNITY PASTURE	2860	25	3000	439,125	206,552	92,948	92,946	43,913
271421	DEADMAN CREEK CRMP	70600	8	2893	329,700	329,700	148,365	148,365	32,970
271422	UPPER CACHE CREEK CRMP	69057	16	27141	1,845,905	1,845,905	830,657	830,657	184,591
271423	PASS CREEK CRMP	9069	1	575	47,813	47,813	21,516	21,516	4,781
271424	CROUSE-LOSTHORSE CRMP	23000	1	1059	104,625	104,625	47,081	47,081	10,463
271425	SHOVELNOSE-THYNNE CRMP	34049	2	3572	307,700	307,700	136,440	136,440	34,820
271426	HAINES CREEK CRMP	189068	3	2041	150,600	150,600	67,770	67,770	15,060
271427	MEMEKAY FLATS PASTURE IMPROVF.	385	6	743	49,074	49,074	22,083	22,083	4,906
271428	CRANBERRY RIDGE CRMP	13968	2	615	46,125	46,125	20,756	20,756	4,613
271429	FARRELL CREEK COMMUNITY PASTUR	5020	14	4629	53,680	53,680	24,156	24,156	5,368
271430	GROUNDBIRCH COMMUNITY PASTURE	47773	15	3028	66,688	66,688	30,010	30,010	6,668
271431	BULL LAKE CRMP	11500	2	784	49,936	49,936	22,471	22,471	4,994
271432	GREEN LAKE CRMP	3000	7	2941	288,974	288,974	130,038	130,038	28,898
271433	KING EDWARD/SWALWELL CRMP	59500	9	4730	315,300	315,300	141,885	141,885	31,530
271434	PUNCHAW COMMUNITY PASTURE	280000	13	4811	208,262	208,262	93,718	93,718	20,826
271436	LILY LAKE CRMP	31174	6	6487	539,715	539,715	242,872	242,872	53,971
271437	LOON LAKE CRMP	102430	10	1847	179,210	179,210	80,645	80,645	17,920
TOTAL SUB-PROGRAM		3278757	608	229882	20,087,814	13,909,221	6,257,125	6,257,125	2,012,830
SUB-PROGRAM PROJECT COUNT	83								
TOTAL PROGRAM		3278757	608	229882	20,087,814	13,909,221	6,257,125	6,257,125	2,012,830
PROGRAM PROJECT COUNT	83								

Note: In Part Two, "Total Cost" includes any previous ARDA assistance; eligible cost in all cases is the expenditure approved under ARDSA.

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                                                 ARDSA PART 2 PROJECTS
                                         CO-ORDINATED RESOURCE MANAGEMENT PROGRAM
                                                  DECEMBER 31, 1981

PROJECT                                    TOTAL        ELIGIBLE       DREE          B.C.        LOCAL/OTH   PROJECT            PROJECT
NUMBER   PROJECT NAME                      COST          COST        SHAREABLE     SHAREABLE      SHARE      RESULTS   UNITS  RESULTS 2  UNITS
                                                                       COST          COST

COORDINATED RESOURCE MGT
 CO-ORDINATED RESOURCE MGMT.

271050   AERIAL PHOTOGRAPHY                 47,738        47,738        21,482        21,482       4,774
271063   TECHNICAL SUPPORT FOR C.R.M.P     390,000       390,000       175,500       175,500      39,000
271408   CRMP MAPPING                        7,849         7,849         3,925         3,925
271435   RANGE FERTILIZATION DEMON PROJ     85,094        85,094        38,293        38,293       8,508         500   HA

 TOTAL SUB-PROGRAM                         530,681       530,681       239,200       239,200      52,282
SUB-PROGRAM PROJECT COUNT       4

TOTAL PROGRAM                              530,681       530,681       239,200       239,200      52,282
PROGRAM PROJECT COUNT       4
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OVERVIEW OF ARDSA PART 3 PROJECTS
PRIMARY RESOURCES DEVELOPMENT
DECEMBER 31, 1981

PRIMARY RESOURCES DEVELOPMENT
IRRIGATION

PROJECT NUMBER	PROJECT NAME	LOCATION	EXPECTED HECTARS COVERED	EXPECTED NO. OF FARMS	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE
271100	CHINOOK COVE WATER USERS COMM.	40M N.-KAMLOOPS	87	0	58,955	58,955	22,108	22,108	14,739
271102	WYNNDEL IRRIGATION DISTRICT	NEAR CRESTON	320	0	177,888	177,888	63,373	63,373	51,142
271103	SOUTHERN INTERIOR BEEF CORP.	OLIVER	81	0	148,382	148,382	55,643	55,643	37,096
271104	ALEXANDRIA THREE PHASE POWER	SO. OF QUESNEL	1299	17	572,258	572,258	194,817	194,817	182,625
271106	MCKINNEY ROAD IRRIGATION SCHEM	NEAR OLIVER	125	0	330,000	330,000	123,750	123,750	82,500
271108	ST. MARY'S PRAIRIE IRRIGATION	NEAR CRANBROOK	213	0	498,808	498,808	187,053	187,053	124,702
271109	BIG BAR RANCHES IRRIGATION SCH	25M W.-CLINTON	166	3	187,050	187,050	70,144	70,144	46,762
271111	NICOLA VALLEY 3 PHASE POWER	STUMP LAKE	816	3	243,000	243,000	91,125	91,125	60,750
271113	BASQUE VINEYARDS IRRIGATION SD	6M S.-ASHCROFT	59	5	147,651	147,651	55,369	55,369	36,913
271114	GLEN VALLEY DRAINAGE PROJECT	FORT LANGLEY	891	0	222,500	222,500	83,438	83,438	55,625
271115	PAXTON LAKE DAM	25M E-KAMLOOPS	30	0	62,800	62,800	23,550	23,550	15,700
271116	CHASE IRRIGATION DISTRICT PIL-	30M E-KAMLOOPS	259	0	57,768	57,768	21,663	21,663	14,442
271117	HEFFLEY IRRIGATION DISTRICT	15M NE-KAMLOOPS	466	0	100,000	100,000	37,500	37,500	25,000
271119	HULLCAR 3 PHASE POWER	5M N.-ARMSTRONG	334	8	183,600	183,600	51,428	51,428	80,744
271121	ENGINEERING STUDY SOUTH EAST	NEAR KELOWNA	0	0	22,100	22,100	8,287	8,287	5,526
271122	SE KELOWNA WASTEWATER IRR SYY	NEAR KELOWNA	0	0	42,900	42,900	16,087	16,087	10,726
271124	VON KEYSERLINCK IRRIGATION SCH	VERNON	243	9	698,220	698,220	261,833	261,833	174,555
271125	BARNES LAKE WATER SUPPLY	ASHCROFT	380	4	225,000	225,000	84,375	84,375	56,250
271126	NICOLA LAKE STORAGE PROJECT	MERRITT-N	0	0	64,812	64,812	24,305	24,305	16,203
	TOTAL SUB-PROGRAM		5793	49	4,043,692	4,043,692	1,475,846	1,475,846	1,092,000
	SUB-PROGRAM PROJECT COUNT 19								

DRAINAGE

PROJECT NUMBER	PROJECT NAME	LOCATION	EXPECTED HECTARS COVERED	EXPECTED NO. OF FARMS	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE
271101	DISTRICT OF KENT-DRAINAGE	AGASSIZ	900	0	240,800		90,300	90,300	60,200
271105	PEMBERTON VALLEY DYKING DISTR.	PEMBERTON	5263	0	3,200,000	3,200,000	1,200,000	1,200,000	800,000
271107	DISTRICT OF SURREY OLD LOGGING	SURREY	260	0	600,000	600,000	225,000	225,000	150,000
271110	NICOMEN ISLAND IMPROVEMENT DI-	DEWDNEY	241	0	328,200	328,200	123,075	123,075	82,050
271118	TOD CREEK DRAINAGE	SAANICH	26	0	200,000	200,000	75,000	75,000	50,000
271120	EAST CHILLIWACK DRAINAGE PROJ-	D.OF CHILLIWACK	1222	0	1,640,000	1,640,000	615,000	615,000	410,000
271123	PITT MEADOWS DRAINAGE - STUDY	PITT MEADOWS	0	0	125,000	125,000	46,875	46,875	31,250
271127	MATSQUI-SIM ROAD DRASINAGE	MATSQUI PRAIRIE	104	5	50,000	50,000	18,750	18,750	12,500
271128	SIMILKAMEEN INDIAN BAND SEC.8	KEREMEOS	720	0	1,840,667	1,840,667	690,250	690,250	460,167
271129	DELTA-NORTH CRESCENT SLOUGH	DIST OF DELTA	520	0	587,000	587,000	220,125	220,125	146,750
	TOTAL SUB-PROGRAM		9256	5	8,811,667	8,570,867	3,304,375	3,304,375	2,202,917
	SUB-PROGRAM PROJECT COUNT 10								

GENERAL IRRIGATION & DRAINAGE

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                                                        OVERVIEW OF ARDSA PART 3 PROJECTS
                                                          PRIMARY RESOURCES DEVELOPMENT
                                                               DECEMBER 31, 1981

PROJECT                                                  EXPECTED  EXPECTED     TOTAL       ELIGIBLE       DREE           B.C.       LOCAL/OTH
NUMBER   PROJECT NAME                   LOCATION         HECTARS    NO. OF      COST          COST      SHAREABLE      SHAREABLE      SHARE
                                                         COVERED    FARMS                                  COST           COST

271003   SMALL IRRIGATION AND FARM WAT- B.C.                   0          0    200,000       200,000        75,000         75,000      50,000
271004   FARM DRAINAGE OUTLET ASSIST.   B.C.                   0          0    200,000       200,000        75,000         75,000      50,000
271112   O'CONNOR LAKE DAM INSKIP AND   15M N-KAMLOOPS        41          2    232,000       232,000        87,000         87,000      58,000

 TOTAL SUB-PROGRAM                                            41          2    632,000       632,000       237,000        237,000     158,000
SUB-PROGRAM PROJECT COUNT        3

TOTAL PROGRAM                                              15092         56 13,487,359    13,246,559     5,017,221      5,017,221   3,452,917
PROGRAM PROJECT COUNT       32

 *** NOTE: EXPECTED NUMBER OF FARMS IS NOT LISTED
ON SOME PROJECTS DUE TO ITS VARIABILITY AND THESE
FIGURES WERE NOT RECORDED ON OUR SYSTEM
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OVERVIEW OF ARDSA PART 4 PROJECTS
SUPPORT SERVICES & COMMUNITY DEVELOPMENT
DECEMBER 31, 1981

PROJECT NUMBER	PROJECT NAME	DIRECT JOBS	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE
SUPPORT SERVICES & COMMUNITY DEV'T SERVICE TO ASSIST PRIM. PRODUCTION							
271203	WEST COAST LAND DRAINAGE SPEC.	2	184,500	140,000	31,776	31,776	120,948
271223	CONAGRA RESOURCE MANAGEMENT CO	0	151,200	151,200	15,120	15,120	120,960
271226	VALLEY FARM DRAINAGE	2	148,500	148,500	25,000	25,000	98,500
271227	DR. D.O. OLSEN, KAMLOOPS VETER	5	184,000	164,000	29,709	29,709	124,582
271232	OTTER FARM & HOME CO-OPERATIVE	0	721,500	721,500	71,092	71,092	579,316
271233	S. SPETIFORE AND SONS LTD.	22	772,750	590,000	123,464	123,464	525,822
271235	DR. WIELAND, CHETWYND VETERINA	3	157,500	135,000	24,375	24,375	108,750
271236	DR. IAN THANE, KOOTENAY VETERI	3	176,995	121,792	21,901	21,901	133,193
271237	COMMUNITY AUCTION SALES ASSN.L	0	43,150	43,150	4,278	4,278	34,594
271247	COR-EL FOOD CORPORATION	3	139,028	114,000	20,700	20,700	97,628
271263	D & G AGRI-CHEM SERVICES LTD.	5	238,000	200,300	36,412	36,412	165,176
271267	NORWEST-PRIVA PLANT LABS.INC.	5	151,500	123,000	20,850	20,850	109,800
271270	TATAL ROSE FARMERS INSTITUTE	0	46,500	31,500	3,938	3,938	38,625
271285	J & L FEEDS LTD.	7	775,300	461,632	74,334	74,334	461,632
271287	SANDERS POULTRY FARMS LTD.	6	355,946	281,946	28,195	28,195	299,557
271288	VERNON VETERINARY CLINIC	5	213,050	111,350	11,350	11,350	190,350
271293	BIG A TANK SERVICES LTD.	3	116,000	106,000	15,228	15,228	85,544
*271294	VALLEY AUCTION LTD.	4	215,070	212,070	21,185	21,185	172,700
271650	SOUTH CARIBOO ANIMAL HOSPITAL	2	295,000	240,000	30,000	30,000	235,000
271667	BEAR MOUNTAIN FEEDERS LTD.	2	348,690	182,690	24,636	24,636	299,418
TOTAL SUBPROGRAM		79	5,434,179	4,279,630	633,542	633,542	4,002,095
SUB-PROGRAM PROJECT COUNT 20							

BRITISH COLUMBIA IMPLEMENTATION SYSTEM

OVERVIEW OF ARDSA PART 4 PROJECTS
SUPPORT SERVICES & COMMUNITY DEVELOPMENT
DECEMBER 31, 1981

PROJECT NUMBER	PROJECT NAME	DIRECT JOBS	EXPECTED NO. OF USERS	EXPECTED NO. OF FARMS	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE
SUPPORT SERVICES & COMMUNITY DEV'T									
RURAL COMMUNITY DEVELOP.									
271000	LILY LAKE ROAD POWER PROJECT	0	17	10	181,980	181,980	37,737	37,737	25,500
271010	SODA CREEK POWER	0	3	2	41,403	41,403	4,303	4,303	19,997
271205	MILLIGAN CREEK POWER	0	27	21	368,085	368,085	92,021	92,021	49,643
271206	SHINGLE CREEK POWER EXTENSION	0	10	8	95,651	95,651	30,998	30,998	15,000
271207	111 MILE VALLEY POWER EXTENSIO	0	14	6	174,932	174,932	43,733	43,733	21,000
271208	ABBOTT ROAD POWER EXTENSION	0	3	3	48,816	48,816	6,330	6,330	16,956
271209	LONE PRAIRIE POWER EXTENSION	0	5	5	66,713	66,713	14,607	14,607	7,499
271211	GORDON CREEK POWER	0	3	3	48,702	48,702	7,878	7,878	19,770
271212	ARCHIE MEADOW ROAD POWER EXTEN	0	3	3	40,896	40,896	10,224	10,224	4,500
271213	MINNIE LAKE EXTENSION PROJECT	0	8	8	153,473	153,473	29,937	29,937	58,263
271214	PIGEON ROAD POWER EXTENSION	0	8	8	67,517	67,517	12,863	12,863	12,000
271219	BIG CREEK COMMUNITY POWER	0	12	5	245,035	245,035	61,259	61,259	45,717
271220	LYNX CREEK RURAL ELECTRIFICAT.	0	3	3	35,395	35,395	5,848	5,848	4,500
271228	GREEN MOUNTAIN ELECTRIFICATION	0	22	19	230,995	230,995	65,498	65,498	43,000
271230	ONE ISLAND LAKE ROAD POWER EXT	0	10	8	157,195	157,195	27,245	27,245	38,705
271241	DOG CREEK RURAL ELECTRIFICATIO	0	34	12	450,000	450,000	89,000	89,000	54,400
271251	CAMPBELL LAKE EXTENSION	0	6	7	59,500	59,500	4,657	4,657	27,070
271252	CHARLIE LAKE NORTH RURAL ELECT	0	0	3	40,000	40,000	8,000	8,000	4,800
271253	MILE 24, ALASKA HIGHWAY RURAL	0	3	3	31,423	31,423	3,712	3,712	4,799
271254	JACKFISH LAKE ROAD RURAL ELECT	0	4	4	43,121	43,121	6,194	6,194	6,000
271255	KNIFE CREEK ROAD RURAL ELECTRI	0	8	5	149,625	149,325	37,406	37,406	23,613
271256	WHITES LANDING/PLETI RD. RURAL	0	5	5	61,209	61,209	6,816	6,816	15,577
271272	FISET LAKE RURAL ELECTRIFICAT	0	5	5	33,500	33,500	3,533	3,533	8,000
271273	RAIL LAKE ROAD EXTENSION	0	8	8	88,926	88,926	5,506	5,506	26,714
271274	JUDSON ROAD EXTENSION	0	3	3	44,346	44,346	9,185	9,185	6,776
271275	HALLAMORE LAKE EXTENSION	0	6	6	47,884	47,884	2,373	2,373	9,000
271276	LOST CREEK POWER EXTENSION	0	3	3	20,025	20,025	3,343	3,343	6,690
271277	DUNN LAKE EXTENSION	0	7	7	46,655	46,655	3,999	3,999	19,700
271278	WALCOTT WEST ROAD, R.E.	0	4	4	56,000	56,000	8,550	8,550	14,900
271279	ECHO LAKE RURAL ELECTRIFICATIO	0	9	0	74,776	74,776	5,447	5,447	13,500
271286	MILE 30 ALASKA HIGHWAY	0	10	6	86,335	86,335	3,841	3,841	27,453
271289	DEKOSTER RD. EXTENSION	0	6	2	32,000	32,000	6,763	6,763	5,674
271290	BECKER RD. RURAL DEVELOPMENT	0	12	0	72,000	72,000	10,056	10,056	24,300
271291	BLAEBERRY RURAL ELECTRIFICATIO	0	3	3	14,076	14,076	3,519	3,519	5,030
271297	SUMAS PRAIRIE WATER SUPPLY	0	600	200	5,885,000	5,885,000	981,250	981,250	3,922,500
271653	BASTIN ROAD	0	4	4	52,700	52,700	3,884	3,884	20,592
271654	PROGRESS SOUTH-POWERLINE EXTEN	0	5	5	45,000	45,000	5,900	5,900	8,200
271655	CAMPBELL CREEK POWER EXTENSION	0	3	3	40,200	40,200	8,637	8,637	10,126
271656	LEE CREEK EXTENSION	0	3	3	65,372	65,372	12,465	12,465	21,242
271657	BARNES LAKE AND YD POWER EXTEN	0	2	2	80,000	80,000	20,000	20,000	27,200
271658	WEBSTER LAKE ROAD R.E.	0	3	3	58,069	58,069	11,150	11,150	16,569
271659	MCKENZIE EXTENSION	0	5	5	52,000	52,000	8,143	8,143	22,914
271660	STEVE PRICE EXTENSION	0	4	4	45,045	45,045	9,550	9,550	15,145
271666	SUSKWA FLATS POWER PROJECT	0	9	9	90,325	90,325	8,268	8,268	34,041
271670	NORTH PRESPATOU EXTENSION	0	4	4	52,250	52,250	5,000	5,000	12,650
271671	SOUTH BUICK EXTENSION	0	4	4	41,400	41,400	4,800	4,800	9,600
271672	GOODLOW EXTENSION	0	4	4	36,740	36,740	1,785	1,785	3,570

OVERVIEW OF ARDSA PART 4 PROJECTS
SUPPORT SERVICES & COMMUNITY DEVELOPMENT
DECEMBER 31, 1981

PROJECT NUMBER	PROJECT NAME	DIRECT JOBS	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE
271672	GOODLOW EXTENSION	0	36,740	36,740	1,785	1,785	3,570
TOTAL SUBPROGRAM SUB-PROGRAM PROJECT COUNT 48		0	10,020,290	10,019,990	1,769,913	1,769,913	4,843,415
PROCESSING FOR VALUE-ADDED							
271001	CRESTON CO-OPERATIVE PACKERS	0	300,000	300,000	29,982	29,982	240,036
271200	B.C. COAST VEGETABLE CO-OP.ASS	14	1,094,300	1,094,300	137,497	137,497	819,306
271201	J & L MEATS CO. LTD.	10	666,000	666,000	108,950	108,950	448,100
271202	KUHLER'S EUROPEAN SAUSAGE LTD.	10	1,171,200	1,071,200	93,651	93,651	983,898
271204	WESTVALE FOODS LTD.	4	130,600	130,600	18,320	18,320	93,960
271210	MCCLEAN AND FITZPATRICK LTD.	0	700,000	700,000	69,369	69,369	561,262
*271215	KINGFISHER ENTERPRISES LTD.	20	600,000	495,000	98,509	98,509	402,982
271216	NORTHERN GEM FOODS LTD.	7	210,000	210,000	19,379	19,379	171,242
271217	MAJUBA FOODS LTD.	5	122,700	85,848	21,462	21,462	79,776
271221	INLAND FEEDERS LTD.	6	101,265	101,265	13,058	13,056	75,149
271222	COLONIAL FARMS LTD.	31	483,200	379,200	85,085	85,085	213,030
271225	SHUSWAP OKANAGAN DAIRY INDUSTR	1	222,324	222,324	21,499	21,499	179,326
271231	CHATEAU JOHN DE TREPANIER ESTA	3	0		0	0	
271234	TRANS-PACIFIC FISH LTD.	23	1,195,000	1,195,000	194,785	194,785	805,430
271238	SEMIAHMOO BAY SHELLFISH LTD.	8	926,742	767,912	95,989	95,989	734,764
271239	ST. JEAN'S HOLDINGS INC./ST.	2	261,800	182,800	27,614	27,614	156,572
271240	FRASER VALLEY FROSTED FOODS LT	0	148,000	148,000	14,800	14,800	118,400
271242	WESTERN PROTEIN FOOD CORP. LTD	10	342,500	287,500	46,169	46,169	250,162
271243	TOP SHELF FEEDS LTD.	3	0		0	0	
271244	VICTORIA FARM MEAT SERVICES LT	10	226,200	173,200	27,972	27,972	170,256
271246	NOEL RODDICK FERTILIZERS LTD.	1	249,040	187,540	21,572	21,572	110,896
271248	SOUTHERN INTERIOR BEEF CORPORA	4	471,201	471,201	60,000	60,000	351,201
271249	SUN RYPE PRODUCTS LTD.	14	1,961,158	1,961,158	208,206	208,206	1,544,746
271250	ARCTIC GRAIN LTD.	11	1,050,000	1,049,000	142,500	142,500	765,000
271257	FRASER VALLEY MUSHROOM GROWERS	12	2,650,000	1,150,000	171,875	171,875	2,306,250
*271258	ROGERS WHOLESOME FOODS LTD.	27	1,846,882	1,746,882	214,588	214,588	108,706
271259	WEST COAST COOLING LTD.	9	157,050	152,050	21,668	21,668	113,714
271260	CLOVERDALE LETTUCE AND VEGETAB	9	150,000	145,000	21,075	21,075	107,850
271261	SUN DEW FOODS LIMITED	8	334,000	274,000	40,387	40,387	253,226
271262	EUROPAC SEAFOODS LTD.	28	490,100	470,100	81,075	81,075	327,950
271264	SIMILKAMEEN UNITED GROWERS' CO	3	162,500	162,500	15,935	15,935	130,630
271265	VANDERPOL'S EGGS LTD.	4	375,000	165,000	21,825	21,825	331,350
*271266	THOMAS A. STEEVES LTD.	19	1,452,479	1,042,661	145,197	145,197	1,162,085
*271268	HARMONY SEAFOODS LTD.	4	68,916	50,986	11,967	11,967	14,982
271269	WALCAN SEAFOODS LTD.	13	629,000	435,000	60,493	60,493	338,014
271271	BULKLEY VALLEY AGRO-DEVELOPMEN	8	131,847	93,947	16,625	16,625	98,597
271280	VERNON FRUIT UNION	0	1,682,000	1,532,000	153,200	153,200	1,375,600
271282	LAKE AREA CO-OP GROWERS' ASSN.	0	1,549,302	1,549,302	154,930	154,930	1,239,442
271283	WESTBANK PACKERS LTD.	0	705,000	705,000	70,442	70,442	564,116
*271284	REDONDA SEA FARMS LTD.	4	93,821	49,690	12,423	12,423	68,976
271292	PAN-READY POULTRY LTD.	21	950,400	584,000	58,400	58,400	833,600

BRITISH COLUMBIA IMPLEMENTATION SYSTEM

OVERVIEW OF ARDSA PART 4 PROJECTS
SUPPORT SERVICES & COMMUNITY DEVELOPMENT
DECEMBER 31, 1981

PROJECT NUMBER	PROJECT NAME	DIRECT JOBS	TOTAL COST	ELIGIBLE COST	DREE SHAREABLE COST	B.C. SHAREABLE COST	LOCAL/OTH SHARE
271295	I.M.KRISP FOODS LTD.	3	201,557	154,412	26,496	26,496	148,565
271296	OKANAGAN DRIED FRUITS LTD.	7	111,706	91,706	15,349	15,349	81,009
271299	PAN-READY POULTRY LTD.SOOKE PL	104	3,200,000	1,357,000	307,625	307,625	2,584,750
271651	SCOTT'S MEATS LTD.	3	165,000	165,000	16,500	16,500	132,000
271652	FRASER VALLEY PROCESSORS LTD.	15	0		0	0	
271661	MERRYFIELD CATTLE CO. LTD.	6	630,000	490,000	68,750	68,750	492,500
271662	VINITERA WINES LTD.	3	378,400	298,400	41,250	41,250	295,900
271663	OLIVER-OSOYOOS CO-OP GROW.ASSN	13	410,000	365,000	36,500	36,500	337,000
271664	EAST CHILLIWACK AGRICULT.CO-OP	53	4,000,000	2,637,000	375,000	375,000	3,000,000
271665	SUN RYPE PRODUCTS LTD.	0	3,245,000	1,558,000	155,800	155,800	2,933,400
271668	WESTERN GREENHOUSE GROWERS CO.	5	685,000	685,000	89,525	89,525	505,950
271669	PITT MEADOWS MEAT PACKERS	5	406,384	328,384	44,423	44,423	317,538
271673	OCEAN SPRAY OF CANADA LTD.	9	1,390,000	1,390,000	75,000	75,000	1,240,000
271674	B.C.BLUEBERRY COOPERATIVE ASSN	1	75,000	75,000	7,500	7,500	60,000
271675	NARAMATA CO-OP GROWERS'EXCHANC	0	865,000	865,000	86,500	86,500	692,000
271676	CONSUMERS' CO-OP ASSN.	4	306,724	304,724	30,473	30,473	245,779
271677	SUN DEW FOODS LTD.	6	38,114	38,114	8,205	8,205	21,704
271678	MONASHEE CO-OP GROWERS' ASSN.	0	953,200	953,200	95,350	95,350	762,500
271679	GOLDEN VALLEY PROCESSORS INC.	6	1,024,215	974,215	97,422	97,422	829,372
271680	LAWRENCE MEATS LTD.	10	142,435	142,435	14,250	14,250	113,935
271682	SUMMERLAND WINES LTD.	5	492,500	377,500	53,650	53,650	365,200
TOTAL SUBPROGRAM		624	44,781,762	35,437,256	4,474,039	4,474,039	33,829,684
SUB-PROGRAM PROJECT COUNT	62						
RURAL EMPLOYMENT							
271218	CORPORATION OF DISTRICT OF SUM	37	305,832	305,832	114,687	114,687	76,458
271224	WINLAW WOOD FARMERS CO-OP	7	51,901	51,901	16,146	16,146	19,609
271281	FOREST STAND IMPROVEMENT PROJ.	8	100,000	100,000	40,000	40,000	20,000
271681	REID COLLINS NURSERIES LTD.	28	585,010	585,010	18,500	18,500	548,010
TOTAL SUBPROGRAM		80	1,042,743	1,042,743	189,333	189,333	664,077
SUB-PROGRAM PROJECT COUNT	4						
PUBLIC INFORMATION							
271006	PUBLIC INFORMATION	0	250,000	250,000	125,000	125,000	
TOTAL SUBPROGRAM		0	250,000	250,000	125,000	125,000	
SUB-PROGRAM PROJECT COUNT	1						
TOTAL PROGRAM		704	56,094,795	46,749,989	6,558,285	6,558,285	39,337,176
PROGRAM PROJECT COUNT	115						

APPENDIX C

BASELINE DATA FOR THE AGRI-FOOD SECTOR AND RURAL COMMUNITIES IN BRITISH COLUMBIA

APPENDIX C

BASELINE DATA FOR THE AGRI-FOOD SECTOR AND RURAL COMMUNITIES IN BRITISH COLUMBIA

	Key Indicators	1977	1981
1.	Number of farms	19,800 farms	20,800 farms
2.	Cultivated farmland	785,107 hectares	829,623 hectares
3.	Farm cash receipts	$520.2 million	$884.7 million
4.	Apple production	314.6 million pounds	412.2 million pounds
5.	Vegetable receipts	$37.1 million	$64.3 million
6.	Cattle numbers	712,000 head	773,000 head
7.	Pig numbers	65,000 head	245,000 head
8.	Barley production	167,000 metric tonnes	209,000 metric tonnes
9.	Milk sales by farmers	411 million litres	476 million litres
10.	Poultry sales	89.8 million pounds	112.8 million pounds

Note: Livestock numbers are for July 1st of each year.

Source: B.C. Agri-Facts

Prepared by: H.H. Bryce, Statistician
B.C. Ministry of Agriculture & Food

APPENDIX D

TERMS OF REFERENCE
PHASE II EVALUATION OF ARDSA

CANADA - BRITISH COLUMBIA July 31, 1981

AGRICULTURE AND RURAL DEVELOPMENT SUBSIDIARY AGREEMENT

(ARDSA)

TERMS OF REFERENCE

FOR A

PHASE II EVALUATION OF ARDSA

I. PURPOSE

The purpose of Phase II of the ARDSA Evaluation Study is to assess the effectiveness of the ARDSA program in meeting its stated goals and objectives within the context of the provincial agri-food industry, and based on this assessment, to make recommendations relating to the current Agreement and possible future initiatives. This assessment is required to meet the evaluation requirements of Federal and Provincial governments, as well as to meet the stipulated requirement for evaluation which forms part of the Agreement.

II. BACKGROUND

The Agriculture and Rural Development Subsidiary Agreement (ARDSA) is one of a number of subsidiary agreements which fall under a General Development Agreement (GDA) signed by the Province of British Columbia and the Government of Canada in 1974. The ARDSA, which is equally cost shared by the two levels of government, has a budget of $60 million and consists of four program components:

I Research, Planning, Training and Market Promotion
II Co-ordinated Resource Management
III Primary Resources Development
IV Support Services and Community Development

The present ARDSA expires in July, 1982, and the signatory agencies to the agreement are desirous of knowing whether the subsidiary agreements' objectives have been met. An assessment of the programs carried out under the Agreement with regard to the stated objectives is required under Section 10(1) of ARDSA. A Phase I Evaluation study has been recently completed and provides some, but not all, of the framework required for a Phase II study. The Phase I report focussed on the evaluation of program effort (rather than achievement) and contains a number of useful hypotheses to be tested in Phase II.

III. OBJECTIVES OF THE PHASE II EVALUATION OF ARDSA

1. To respond to the evaluation requirements of Federal and Provincial central agencies, including the assessment of cost efficiency of project expenditures.
2. To assess the effectiveness of ARDSA programming in meeting its stated goals, objectives and intent and to assess the degree of progress achieved.
3. To assess the impact of ARDSA expenditures on the agri-food industry in B.C.
4. To assess the socio-economic impact of ARDSA expenditures on rural areas in B.C.
5. To assess the implementation of ARDSA as it relates to the overall effectiveness of the program.
6. To provide an input to consideration of directions for future agriculture development programs in B.C., particularly the feasibility of continued development funding in the various program areas/industry sectors/eligible areas.

IV. ARDSA EVALUATION STUDY - PHASE II TASKS

The evaluation process to be followed by the consultant in conducting the PHASE II Study is outlined below:

BACKGROUND

1. review the legal ARDSA and GDA documentation, current program and project status and mechanisms for implementation.
2. gain an appreciation of the policy framework and intent which formed the basis of the Agreement at its inception in 1977.
3. review and document the baseline data for the agri-food sector and rural communities in B.C. in 1977 and now, based on available sources of published data.
4. review the Phase I Evaluation Study and consolidate its substance, conclusions and tentative hypotheses such that these will be sufficiently covered to enable the Phase II report to stand as a complete evaluation document.

PROGRAM REVIEW AND ASSESSMENT

5. carry out a program review and assessment of all projects funded to date using relevant measures such as project scale, distribution across regions and industry sectors, degree of private contribution, projected project rate of return, projected employment generated, etc.

6. carry out an intensive analysis of completed projects, based on a field survey which gathers actual project results.

7. economic, socio-economic and financial indicators of performance are to be developed and utilized in carrying out the intensive analysis of completed projects.

8. assess program implementation mechanisms as they relate to program effectiveness; including, eligibility criteria, program guidelines, project selection procedures and program administration.

IMPACT ASSESSMENT

9. based on the foregoing program/project assessment, conduct an impact assessment of ARDSA by assessing the effectiveness of the ARDSA program in meeting its stated goals and objectives, and by assessing its impact on the agri-food industry in B.C., the socio-economic impact on rural areas and unintentional impacts where identified.

SUMMARY/CONCLUSIONS

10. prepare a summary of the evaluation and the conclusions so obtained (including those of the Phase I Evaluation).

RECOMMENDATIONS

11. based on the data and analysis contained in the program review and impact assessment conducted, prepare recommendations relating to the current Agreement and possible future initiatives, including consideration of the direction and scale of programs in terms of industry sector and geographic areas which have been funded. The scope of the recommendations should include consideration of:

    - program elements which should be enhanced, modified, renewed or discontinued, with emphasis on the relative returns from incremental expenditures in each of the ARDSA programs;
    - the appropriateness of the geographic boundaries of the agreement;
    - the appropriateness of continued assistance to industry sectors which have been funded to date under the agreement;
    - improvements to program effectiveness that might result from changes in eligibility criteria, program guidelines, project selection procedures and program administration.

V. REPORT PREPARATION

The consultant will be expected to prepare a Final Report in the following suggested major sections:

EXECUTIVE SUMMARY
BACKGROUND (Tasks 1-4)
PROGRAM REVIEW AND ASSESSMENT (Tasks 5-8)
IMPACT ASSESSMENT (Task 9)
SUMMARY/CONCLUSIONS (Task 10)
RECOMMENDATIONS (Task 11)

An Interim Report will be required at the end of the Program Review and Assessment section. The Interim Report is to be completed within five months from the date of authorization to proceed. A Final Report will be due within ten months from the date of authorization to proceed. Twenty copies each of the Interim and Final Reports will be required.

All relevant data, information, documents, reports, draft or otherwise, gathered or prepared by the consultant during the project are to be turned over to the Evaluation Steering Committee.

VI. STUDY COST

The budget ceiling for the Phase II Study is $90,000 for fees and expenses.

VII. LIAISON AND CO-ORDINATION

The Phase II Evaluation Study will be managed by an Evaluation Steering Committee composed of members of the four signatory agencies (the Department of Regional Economic Expansion, the Ministry of Agriculture and Food, Agriculture Canada, and the Ministry of Industry and Small Business Development). The Steering Committee will be directly involved at all stages and will review all outputs at a draft stage and all major steps prior to their being undertaken. Frequent working meetings will be required between the Consultants and the Steering Committee. A contract will be established with the ARDA Branch, British Columbia Ministry of Agriculture and Food. Four copies of the proposal should be submitted to Mr. T. Horbulyk, ARDA Branch, British Columbia Ministry of Agriculture and Food, 808 Douglas Street, (2nd floor) Victoria, B.C. V8W 2Z7 no later than 2:00 P.M. Friday August 21, 1981 to be considered.

VIII. CONTENTS OF THE PROPOSAL

1. Outline of qualifications of the firm in terms of relevant project experience.

2. A presentation of the proposed approach and methodology.

3. Proposed project work plan and proposed staff assignments in person days.

4. Curricula Vitae of proposed project staff and applicable per diem rates.

5. Proposed subcontractors or associates and project tasks to be undertaken by each to be included in the proposal.

6. Project budget breakdown against the work plan prepared.

IV. PROPOSAL PREPARATION

The proposal call period will extend to August 21, 1981. In order to provide any additional background or information deemed necessary to prepare a proposal, the Evaluation Steering Committee will be available on August 10, 1981 to meet with interested consultants at the offices of Ministry of Agriculture and Food, 5th Floor Boardroom. To schedule this meeting contact T. Horbulyk at 387-5121.

For any questions concerning the proposal, the consultant may contact the members of the Evaluation Steering Committee in Victoria as follows:

Mr. R. Ion, Development Analyst
Department of Regional Economic Expansion
(388-3183)

Mr. T. Horbulyk, Head
Research Division
ARDA Branch
British Columbia Ministry of Agriculture & Food
(387-5121)

Ms. D. McLaren
Development Economist
Agriculture Canada
(388-0271)

Mr. J. Robertson
Senior Economist
or Mr. C. Caple
Senior Business Analyst
British Columbia Ministry of Industry and Small Business
(387-5883)

To provide background for proposal preparation, the following documents are enclosed:

- copies of the GDA and ARDSA
- ARDSA Progress Reports #1 and 2, covering the period from August, 1977 to August, 1980
- ARDSA Evaluation Study Phase I*
- ARDSA Monthly Financial Summary*

* These are not public documents and should be returned by August 21, 1981.

Further information and additional
copies of this publication may be obtained from:

THE PUBLICATIONS OFFICE
B.C. MINISTRY OF AGRICULTURE AND FOOD
PARLIAMENT BUILDINGS, VICTORIA, B.C.
V8W 2Z7

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